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PEDIATRICS

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DEVOTED TO THE STUDY OF

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ORIGINAL ARTICLES

HYDRONEPHROSIS, PYONEPHROSIS — NEPHRECTOMY IN A BOY AGED FOUR-AND-A-HALF YEARS.*

By EMERY MARVEL, M.D.,
Atlantic City.

MALE, F. C., age 4½ years. American birth. Italian parentage. Previous history that of a healthy child, accustomed to the rough habits common in the lower class Italian families. Family history negative.

In the afternoon of October 7, 1898, I was called to the Atlantic City Hospital, where I found the boy in great agitation, the result of injuries from a gun-shot wound and of fright. The best information obtainable was that while playing in the house yard, a neighbor's boy seized a gun that had been left at the door, and, pointing it at the patient, who was running away, fired, and the charge took effect in the patient's back. The surfaces of the back of the head, body, and legs, were covered with bleeding holes, left by the penetrating shot. These surfaces were cleansed with soap, water, and a solution of bi-chloride of mercury, dressed with sterilized gauze; and as the parents objected to leaving the boy in the hospital, he was wrapped up warmly and allowed to go to his home. Calomel was given in divided dosage, and bromide was given for its sedative and analgesic effects, and with desired results. There were 318 apertures made by the shot, and tracks three to four inches in length left in places (thigh) where the shot had ploughed their way through the tissues. Liquid diet was ordered, and the dressing changed each day. No attempt was made at this time to remove any of the shot. On October 8th, the day following the shooting, the urine was thick and dark, analysis giving the following result:

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*Read before Philadelphia Pediatric Society, April 11, 1899.

Color, smoky red; reaction, alkali; consistency, ropy; albumen, present; blood cells in large quantities.

The temperature 101 F.; pulse and respiration slightly accelerated, patient resting with a fair degree of comfort. Several shot were observed to be very superficial, one being located to right of symphyisis pubes at the side of the spermatic cord. The abdomen was slightly distended and tender, some pain complained of in penis and right testicle.

During the following week no special manifestations, patient resting fairly well, but complaining occasionally of the pain in penis and testicle.

October 18th, all openings made by the shot were closed; in but one was there any pus formed, and this in the skin only. At this time there was passed a long intestinal worm, and santonin, followed by a purge, was given, with the result of bringing away a nest of parasites.

The urine had so cleared in its macroscopical appearance that no examination was made at this time.

On the following day I removed what superficial shot could be found, sixteen in number.

October 20th the boy was going out and playing, and with no discomfort, excepting the occasional pain referred to in the penis and right testicle.

October 25th the parents observed a slight bulging in the right side, to which my attention was called two days later. This gradually increased in size during the three subsequent days, and was located in the right lumbar region just below the last rib and anterior to the mid-axillary line, being triangular in form, with its base upwards and outwards, its apex pointing downward and inward. There had been some little pain felt in this region, but no tenderness could be noticed upon pressure or manipulation. No fever—pulse and respiration little more than normal.

DIAGNOSIS.—Hydronephrosis, a result of obstruction in the right ureter.

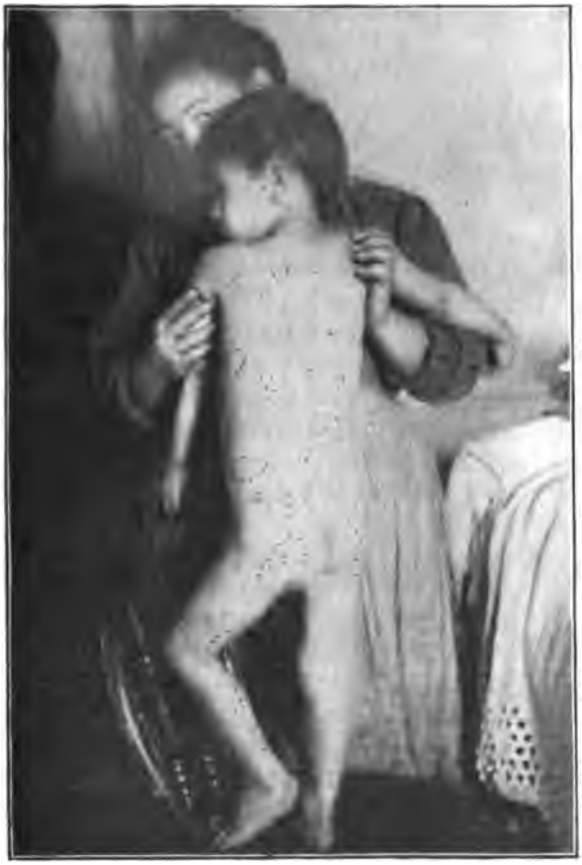


FIG. I.
Showing apertures left by shot (3 days after injury).

The following day a consultation was called. Diagnosis confirmed. Aspiration was agreed upon and performed the next day, with the patient under chloroform, when twenty-seven ounces of fluid were withdrawn. This fluid was straw-color, slightly urinous in odor, and gave the following result:

Color, straw; reaction, alkali; albumen, present; bile. present; sugar, none; blood cells and phosphatic crystals.

The urine from the bladder the same day showed the following:

Color, amber; reaction, neutral; albumen, none; bile, present; sugar, none; blood-cells, none; phosphatic crystals, many.

The next day, November 6th, the return of the bulging was observed, and it increased rapidly until November 8th. The high tension of the sac gave me apprehension of rupture, and operative section was decided upon. The following day, November 9th, the patient was chloroformed (picture showing tumor), and an attempt was made to remove the kidney. The organ not being found after considerable search, palliation was accepted, and drainage established through a lumbar opening. Although the heart's action was feeble, the reaction of the patient was fair.

During the next eight days little of importance was manifested. Temperature reached 102 F. night of operation, and afterward played between 100–2 F. and normal. Heart's action kept rapid, feeble, and irregular. Digitalis and strychnia given. The daily amount of urine passed from the bladder ranged from five ounces to seventeen ounces, the average being ten. The urine through the lumbar opening was sufficient to keep two dressings saturated each day, and was very ammoniacal in odor. On November 19th the temperature rose to 102 F., and the following day to 104 F. From November 19th to December 1st the temperature was of the most irregular type, playing between normal and 105 F., as shown by temperature chart.

This behavior of the temperature, with much sweating, although no chill, aroused suspicions of septic infection, but December 1st the temperature became normal and remained normal for the next thirteen days. Then, December 13th, it suddenly jumped within a few hours to 106 F. As the mother had, the day before, given the patient some nuts and other indigestibles, and this indiscretion was held responsible for the trouble. From December 13th to December 31st was a period of greater irregularity of temperature than that previously mentioned, the range being from 106 to normal, with two defervescnces. During this time there was profuse sweating and wasting, and a collection of the discharge from the lumbar opening gave the following examination on December 20th:

Color, milky; reaction, alkali; albumen, yes; pus, in large quantities; blood, yes.

The bladder excretion of the same day gave this result;

Color, brownish; sp. gr., 1023; reaction, acid; albumen, none; sugar, none; phosphates, yes; bile, yes; crystals of amm. phosphates; no cells, no casts nor urates.

There was no further hesitation in deciding that the disturbance here was due to purulent infection, and I immediately determined to attempt again the removal of the kidney. The following day ether was given to the patient, and the operation was performed. It resulted in finding and removing the kidney. Upon its removal pus was found in its hilus and calices. The specimen will show its injuries to some extent. With the exception of the failing respiration, due probably to ether narcosis, and described more fully elsewhere, the patient has made an uninterrupted recovery.

I might add that the skin has been acting very freely, and that the quantity of urine passed in twenty-four hours some two weeks ago was twenty fluid ounces; and free from any pathological elements.

Some features in the clinical history of this case will be found of special interest.

First.—The significance of the hematuria, and the subsequent pain complained of in the penis and right testicle.

Second.—The first attempt at nephrectomy resulting in establishing drainage through a lumbar opening.

Third.—The septic infection which took place through this opening.

Fourth.—The details of the second operation, or nephrectomy.

The reddish urine voided the day following the injury, its examination proving the presence of large quantities of blood; the location in the back, over the kidneys, where several shot entered, and the penetration of some of the shot to a distance of three inches—as shown in the thigh—seemed conclusive evidence of shot penetrating, if not peforating the kidney.

Blood in the urine may be from any part of the urinary tract, the kidneys, ureter, bladder, urethra, but the immediate conclusion in this case was that it was due to injury to the kidney. The subsequent pain in the penis, which organ was almost always in a state of erection, and the pain in the right testicle, which was retracted, suggested to me reflex irritation from the injured kidney. As we know, this symptom is often present in renal irritation from calculus.

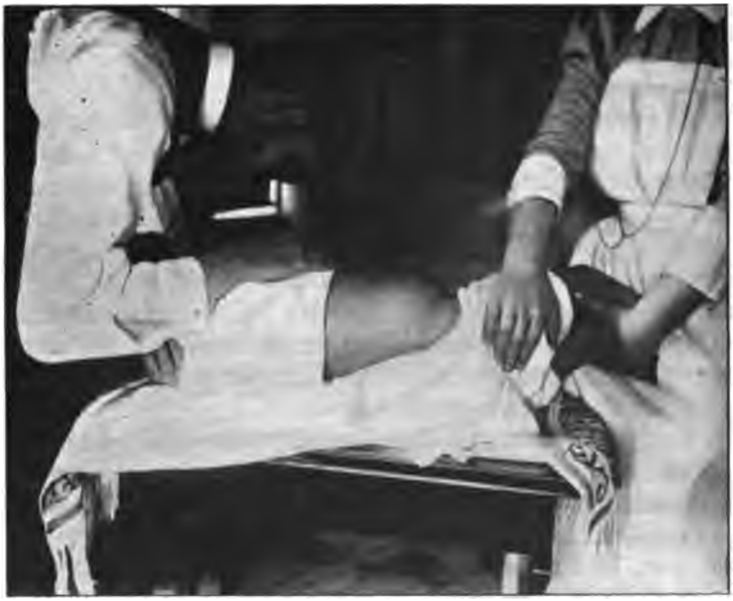


FIG. II.

Showing tumor (hydronephrosis) at time of first operation (lumbar drainage).

But since the complete obstruction of the ureter followed, I am inclined to believe this manifesting symptom was reflexed from ureteral injury. What was the character of this injury to the ureter which resulted in complete closure? may be a pertinent question. Knowing the penetration of shot in the direction where the ureter is placed, and knowing also the distance some of these shots traveled, it seems reasonable to hold them responsible for the injury. Such injury might be regarded as

First.—That of a shot falling into the hilus and lodging in the lumen of the ureter, forming a ball-valve and obstructing the exit of the urine. But would not this have given the most excruciating colic pain, which was not present, and would not the obstruction most probably have been incomplete or periodic?

Second.—That of a shot injuring the wall of the ureter, which injury, repairing itself by a cicatricial band constricted the lumen, or

Third.—That of a shot perforating the wall and lumen of the ureter—an injury repairing itself by inflammatory overgrowth of tissue which gradually filled the lumen, and later its cicatricial contracture forming constricting bands completely closing the lumen.

Now, if we revert to the beginning of the obstruction, and remember that ten days elapsed before aspiration was deemed necessary, and note that after the aspiration but *three* days were required for the bulging to be *more pronounced* than it was after the above-mentioned *ten* days, and also note that all of this was without any very marked pain, it would seem reasonable to conclude that the filling of the cavity was at first a result of incomplete obstruction, gradually becoming complete—while the rapidity of the second collection was the result of *complete* obstruction in the ureter lumen. Hence it is the latter condition—that of perforating the wall and lumen of the ureter—which seems to me the injury that caused the subsequent obstruction.

There is another condition spoken of by Holt, of New York, that occurs in childhood when there has taken place an injury to a kidney in which a hydronephrosis subsequently results. The definite cause of this condition has never been explained—Holt himself throwing no light upon it.

I would call attention afresh to the first operation for the extirpation of the kidney, to the causes leading to that operation, to the failure to find the organ, and to the remedial measure of establishing the drainage for the excreted fluid through an opening in the back.

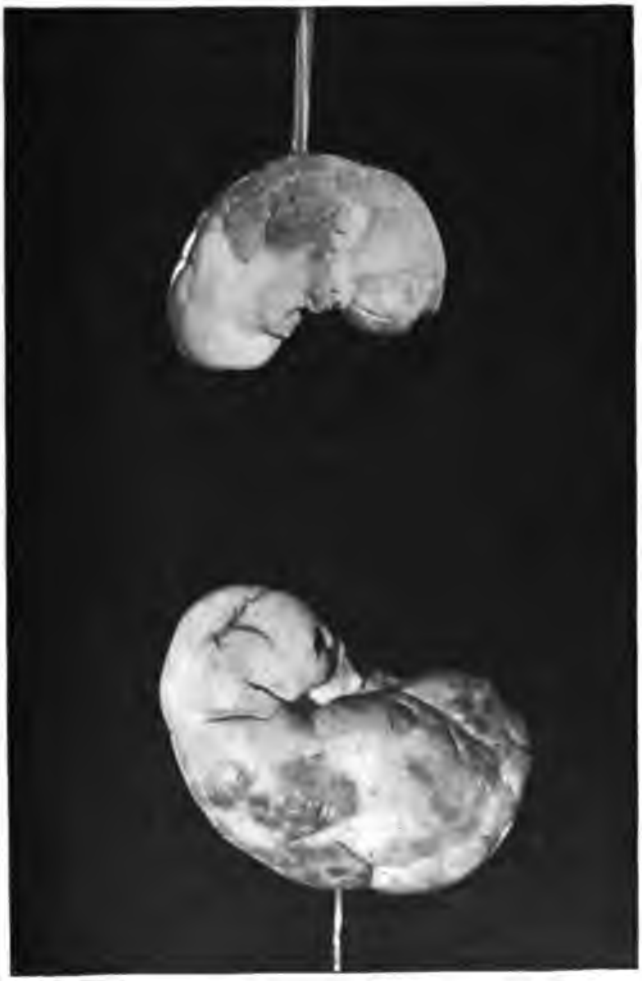
The most conservative surgical treatment for obstinate hydronephrosis takes the following steps:

First.—Repeated aspiration. This has resulted in remedying the fault in one case, recorded by Jacobson—a case conducted by an English surgeon, wherein the probable cause of the trouble was a kink or twist in the ureter.

Second.—Nephrotomy, with the establishment of drainage through a lumbar sinus. To this step may be added a method once used, but now no longer practiced—that of injecting into the sac irritating fluids, such as iodine, carbolic acid, etc., to set up acute inflammation for the purpose of uniting its walls and closing the cavity.

Third.—Nephrectomy, or complete extirpation of the kidney. The rapid refilling and distension of this cavity after the aspiration, requiring but three days where it had previously required ten, seemed conclusive evidence that complete obstruction had taken place, and that this obstruction was due to a permanent closure of the ureter. This also pointed to the apparent hopelessness of correction by repeated aspiration, which operation would have been necessary about every third day. The constant exposure of the patient to infection through an open wound contra-indicated to me that step, especially when such a course would leave the patient always subjected to being wet with his urine and redolent with its unpleasant odor. With these considerations in view, I decided to attempt the removal of the kidney, and accordingly proceeded to do so on November 8th, as stated.

A horizontal incision, two fingers below the last rib, and in line with it, was made. This incision, about three inches in length, was carried through the skin, fascia and muscle, exposing a glistening, purplish sac, which ruptured from its own pressure and discharged over a gallon of rather clear, watery fluid. The hand was then introduced into this cavity in search of the kidney, which, however, could not be discovered. A second incision through all the coats was then made from the middle of the horizontal incision downward, towards, and to the greater prominence of the brim of the ilium. The hand was again introduced and all structures examined, but it failed to find any body that corresponded to the structure of the kidney, although the ascending colon and the under surface of the liver could be recognized. After much time had been given to the search for the kidney, and as the patient's circulation was much enfeebled—the heart's action being 170—I decided



Ventral Surface of Kidney (left). FIG. III. Dorsal Surface of Kidney (left).

to close the wound and leave a tube in the cavity for drainage, closing the wound everywhere excepting at the place occupied by the tube.

As has been mentioned, one of the objections to leaving an open wound—that is a lumbar sinus—is the possibility of purulent infection. Reference to the temperature charts will show that an elevation began on the ninth day after the operation, and that after this there was observed a yellow, creamy discharge through the tube. Exactly when this infection took place may be difficult to say, but we know that elevation of temperature is mostly seen within a comparatively short time —one to four days—after the infection. We are inclined to believe infection took place here several days after the operation, and not at the time of the operation. Yet that may be considered an open question.

In the operation for extirpation of the kidney the same course was selected as in the first operation—that of the lumbar route. The horizontal incision was almost a reopening of the corresponding one in the former operation. A rigid catheter was inserted in the existing sinus —which was almost closed—taking the course of the track, and this was used as a guide, but as the kidney showed itself in the horizontal incision, this guide was not further used. The kidney having been found, it was dissected from its fatty capsule and with some difficulty brought into the wound. Its size, being much greater than normal, made it more difficult of manipulation, and it was necessary to encircle the pedicle *en masse*. Three No. 3 silk ligatures having been broken in the effort to fasten this pedicle, silkworm gut was placed around it and tied. A section of the pedicle was then made by blunt scissors through the hylus, freeing the kidney, the dimensions of which were as follows:

Greater curvature	16 cm.
Breadth	5½ cm.
Width	5 cm.
Lesser curvature	10 cm.

When section of the hilus was made, considerable pus was freed, yet this seemed to be localized to the hilus and the ureteral sac, as no abscess could be detected in the kidney itself.

During the cleansing of the wound the silkworm gut ligature slipped off the pedicle, setting free the renal vessels. Fortunately, these were quickly caught by clamp forceps, and then three separate silk ligatures were placed upon the structures of the pedicle. These ligatures were left with long ends, thus forming a drain for the wound, which was septic from the pus let free from the hilus. The wound was then closed, dressed, and the patient taken in fair condition from the table to his room.

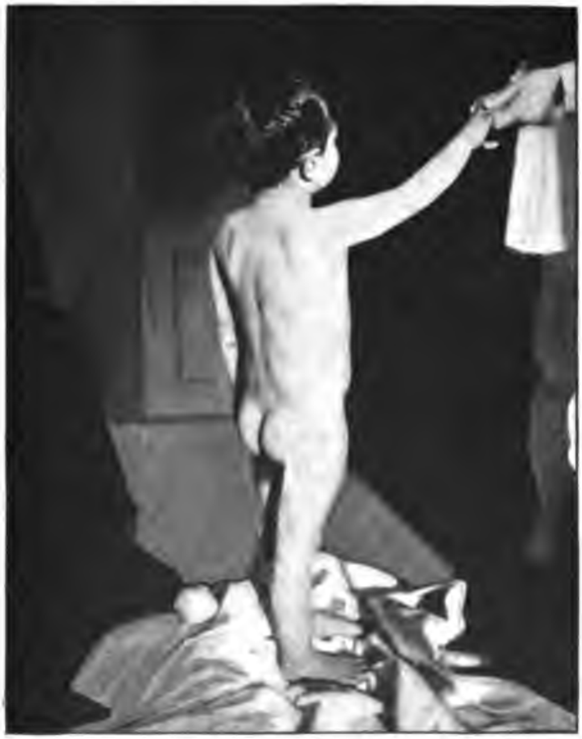


FIG. IV.
Photograph, March 7, '99, after recovery, showing cicatrices.

Ten minutes later feeble respiration was noticed—eight respirations per minute, and very shallow—but the heart's action was fair. Three minutes later still the respiration stopped entirely. Forced respiration was begun, whiskey, strychnia, atropia, given hypodermically, body elevated, anc oxygen ordered. For twenty minutes artificial respiration was continued, as the patient would not breathe without this course. Oxygen was then given. A half a gallon normal salt solution given in bowel. Reflexes were entirely absent. For four hours, at intervals of about twenty minutes, respiration would stop, and during this time stimulants, oxygen, forced respiration with the tongue necessarily held forward, were depended upon. The first return of pupillary reflex was four hours after the patient had left the operating table. The return to consciousness after this was progressive, and from then on no interruption in the recovery took place.

The stitches were removed upon the ninth day after the operation. Their removal was followed by a slight separation of the approximated surfaces. On January 10th, nineteen days after the operation, the ligatures were, with much traction, removed, and the patient was discharged from the hospital on January 14th, twenty-three days after the operation.

The mortality of this operation, as given ten years ago by John Ashurst, Jr., was 36 per cent.

Henry Morris in statistics for 1898 states that in eighteen cases of nephrectomy for stone there were five deaths, or a mortality of nearly 30 per cent., and in eleven cases of nephrectomy for hydronephrosis and pyonephrosis there were four deaths, or a mortality of nearly 28 per cent.

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RESEARCHES ON INDICANURIA AND PHENOLURIA IN THE DIGESTIVE INTOXICATION OF CHILDREN.

By E. THOMAS, M.D.,
Privat-Docent for the Diseases of Children in the University of Geneva.

WE already possess numerous works which treat of the nature and rôle in the organism of the various members of the aromatic series—indol, phenol, etc. The more we study the disassimilation products of the albuminoid materials, the more we seek to determine the conditions under which they appear; and the more, too, is it apparent that these problems of biologic chemistry have a great importance in the life of the individual. Naturally some obscure problems remain to be solved; and to this end we must have new observations, and they must also be as complete as possible.

Without possessing the fanaticism of some investigators, we are ready to admit that at the present time knowledge upon these subjects is the property of the few. The great majority of practitioners entirely ignore this study. This is why we feel justified in publishing our own attempts to clear up some obscure clinical facts.

The study of phenol presents difficulties. Ammann's method is as follows:

Weigh 60 c. cm. of urine in a glass flask and add a few drops of sulphuric acid. Distill the quantity until but 30 c. cm. remains, and then add 20 c. cm. of distilled water. Then add a few drops of a pure solution of soda with 3 c. cm. of a 2 per cent. solution of diazobenzol-sulfonic acid in water. The resulting color is compared with a color scale of liquids especially prepared in the following manner: Seventy-five parts of pure paracresol and twenty-five parts of crystallized phenol are dissolved in distilled water in such proportions as to prepare a series of liquids containing 10, 20, 30, 40, 50, etc., up to 100 mgms. of the combined phenols. These liquids are treated with diazobenzolsulfonic acid, and thus give a scale of colored mixtures each corresponding to a fixed quantity of phenols.

Now, to state what is actually known upon this subject:

1.—The presence of these substances in the urine is the result of a process of putrefaction of the albuminoid contents of the intestine, whether intermingled in normal quantity or otherwise (usually the former).

2.—The indol and phenol are converted by a well understood process into sulfo-conjugate acids, which are said to be not very toxic. I am by no means certain as to the truth of this claim, and am now making researches with a view of determining the point. It is important to know the organs in which this transformation of albuminoids occurs. With regard to the phenols, Koch's experiments lead to the belief that the liver plays a prominent part in their formation.

The latest researches seem to indicate that indol is formed in the intestine; on the other hand, the liver is said to impede the passage of these substances through the portal circulation. In fact, when there is much indican in the urine we usually find alimentary glycosuria. There is a close relationship between the failure to arrest the passage of toxic substances and the appearance of the sugar. In these cases exhibition of hepatic extract prevents the indicanuria.

Petitpas gave indol to healthy young men, and discovered that the quantity necessary to produce indicanuria varies much in different individuals. We know that persons who appear to be equally healthy have a variable hepatic resistance. All in all, it appears that the liver, through the bile or otherwise, plays an important part in either preventing the formation of indol in excess or of destroying it after it has formed.

Concetti, who made a great number of these analyses, arrived at the following conclusions:

1.—All affections of the digestive organs, chronic or acute; the infectious diseases or any others which produce a slackening of the functions of these organs, are accompanied by a great increase in the amount of indican.

2.—Tuberculosis by itself is not an efficient factor in the production of indican. It acts only by producing a weakening of the digestive organs as a part of general debility. In tuberculosis of the bones and ganglia, when the general condition is unimpaired, indicanuria does not appear.

3.—Simon made interesting researches on the part played by the hydrochloric acid of the gastric juice in the production of indicanuria. He thinks that the diminution or absence of hydrochloric acid in the gastric juice increases the quantity of indican unless there exists lactic acid in good proportion. The antiseptic value of gastric juice is, in such a case, of great importance. Constipation has no influence.

Rovighi's experiments, quite recently made, show the possibility of hepatic and renal alterations following the repeated injection of indol and phenol. Bois and Hand had already proved the production of such alterations under the influence of organic acids.

These facts are in accordance with a very interesting observation by Levy, who sought only albumen, sugar, and urobilin; but in his case it is probable that intoxication by phenols and indol played a part in the result. He relates the case of a young girl, aged 17 years, who had suffered for the past three years with severe vomiting and gastric pains. She died after several attacks of the malady. At the autopsy, Levy found fatty infiltration of the liver with marked parenchymatous nephritis. Urine had never shown the presence of albumen, but urobilin was strongly present, and the color was very dark. Certain cases occur in young individuals with delicate stomach and neurasthenia, much like the present instance.

This intoxication, due to intestinal poisons, brings about within a certain interval liver and kidney troubles, often with serious alterations of these organs. Baginsky has proved in numerous clinical and anatomical studies, that in the serous infantile diarrheas, an intoxication by ammonia and other products may be present and may work serious injury to the kidneys and liver. The organic combustion is incomplete in these cases and the metamorphosis of urea cannot take place. Thus auto-intoxication arises from various causes—from excess of indol and phenol and from ammonia as well. In chronic or subacute cases we may observe the same symptoms—especially in city children, denoting the same slackness of nutrition, which is well explained in the works of Bouchard and his pupils.

My five cases refer to children between the ages of four and nine years. Of this number there are four girls and one boy. Another boy presented somewhat different symptoms, and I could not examine him long enough to give positive conclusions about him. All these children belong to families in easy circumstances and living in good hygienic conditions. The parents are, in general, healthy. In two of the cases I found arthritic and nervous heredity, arthritism alone in one case and paternal tuberculosis in another.

The mode of onset of the disease was variable. The period up to the second dentition was generally normal, although two of the patients had some ailments. Nourished on either mother's or cow's milk, the children had had no digestive disturbances. One of the girls had a peculiar enteritis when one year old. She recovered, but her digestion had always been imperfect, requiring various precautions.

Anorexia, vomiting, general restlessness, and anemia, without obvious exciting cause, have, as a rule, been observed by the parents and reported by them to the physician. In one instance the symptoms began with a sudden attack of syncope. The symptomatology may be arranged as follows:

General State.—More or less anemia and pallor, without apparent cause; emaciation, not striking, however; in one case imperfect development of the stature; weakness of muscles, especially of those of the abdominal walls; at times even slight eventration.

Digestive Organs.—Slackness of digestion; the appetite generally remains or is but little impaired; nausea or vomiting is occasionally present. In one case there were false hepatic crises, to be imputed to spasmodic pains of the ascending colon; in other cases there were acute gastric catarrh. The tongue is but slightly or not at all coated; no dilatation of the stomach; no enteroptosis. It has already been mentioned that the weakness of the abdominal walls plays a prominent part in these cases. On the whole the symptoms are changeable, vague, the indications for treatment are not clear; the parents are anxious, and we almost share their anxiety, especially if the children have a tubercular inheritance.

Respiratory Organs.—In one case only were respiratory troubles noted. The patient had dyspeptic asthma. Notwithstanding the fact that the nose and lungs may be healthy, this condition makes its appearance as a coryza.

Nervous System.—Some nervous exhaustion is present.

The child may be downcast, and may learn with difficulty. Headache may be present, but not sick headache.

Peculiarities of the Urine.—It is not easy to determine the twenty-four-hour amount when the child lives at home, but it does not seem to be lessened. I usually have the urine collected between the hours of 6 P.M. and 8 P.M., and in this way get the product of the principal meals. It will be seen by reading the notes of my cases that the urea is diminished; the average amount for children over two years of age should be 15 to 20 grams per 1,000 c.c. The indican reaction was always plain, the chloroform in the test tube being always colored throughout, with a dark blue circle above. Only recently have I been able to study phenol quantitatively, but its presence is always demonstrable by the characteristic reaction. Skatol, which should be a sign of constipation, was but rarely present. Neither sugar nor albumen were found at any time. It would be interesting to study digestive albuminuria, to which Robin originally called attention in these cases, since it occurs more frequently than is generally believed.

This affection is essentially chronic, and it is difficult to state when begins. Diagnosis can be made only from the examination of the urine.

The symptomatology is, on the whole, various, indefinite, reaching into the general condition and the state of the digestive organs. The disease is a chronic auto-intoxication, with intercurrent acute accidents. It cannot actually be attributed to external causes, since in every case the rules of general and alimentary hygiene were well observed. The affection in part has hitherto been undescribed. In some respects it resembles the gastric dilatation so well described by Comby, but there are essential points of difference. I believe that as observations multiply light will be shed upon these subjects, which are interesting alike to the physician and physiologist.

The treatment must be directed to the general state. These children are weak and have a torpid nutrition. I insist upon moderate exercise, life out-of-doors, salt and sulphur baths, taken in repeated and prolonged sessions. One must endeavor to modify the patient's constitution and lead his organism to act in a stronger way.

We must, however, not make the mistake of giving too rich food to the children of arthritic ancestry. It is, in fact, in these very individuals that we find the torpidity of nutrition. They experience abnormal fermentations. Despite the desire of the parents to strengthen the child, it is better to suppress meat in these cases or to allow it in small quantities only. The vegetarian diet is frequently useful. I always insist upon the regularity in the relief of the bowels and lavage of the intesttines twice or thrice a week is very useful. I make use of hydrochloric acid and benzo-naphthol—the latter in varied doses, in accordance with the age. It is important to give it frequently during the day to thoroughly disinfect the bowels. The following observations have been the basis of this work.

1.—A boy, aged 4 years; first seen February, 1894, for an attack of pneumonia, from which he fully recovered. His father died of pulmonary tuberculosis, his mother and an elder brother are in good health. In the following October he exhibited pallor, general weariness, poor appetite, discomfort after meals. He was treated with pulv. rhei and syrup. ferri iod. In 1895 had acute collapse after a meal, without any plausable explanation; general state as before with some variations. In January, 1896, patient treated with hydrochloric acid, tinct. nucis vom. and salt baths. There was great improvement. The child did well in the country during the following Summer, but as soon as he returned to town the same symptoms reappeared. In February, 1897, the urine was examined. Urea was present 14 grams per 1,000 c. cm. of urine; indol was present with a slight amount of skatol. The patient's weight was 23.5 kgms. (51 pounds 11 ounces). The treatment consisted of hydrochloric acid, benzo-naphthol, and appropriate diet. As long as this prescription was kept up the child improved, but when after a month it was discontinued the symptoms reappeared. On the whole there was an improvement in the general condition, the weight having advanced to 23.8 kgms. (52 pounds 6 ounces). On April 8th there was but 8.68 grams urea per 1,000; a large amount of indol was present with a little urobolin. He was placed upon his old treatment, and improved a good deal during September. The amount of urea was increased to 17 grams per 1,000; indol still present in an increased extent. After two months sojourn in the mountains the general condition became satisfactory. Indol still present.

In January, 1898, there was a relapse of the old trouble.

but less marked than on previous occasions. The general appearance did not suffer, but the child complained of slow digestion, although neither pain nor vomiting was present. The stomach is not nor has it ever been dilated. This relapse yielded readily to treatment, and by the end of February indol and phenol had disappeared from the urine. Up to the present time the child has continued well, has grown, and according to the testimony of the parents, is quite transformed.

2.—A girl, aged 9 years; had a severe attack of pneumonia when 3 months old. Has developed slowly and with habitual weakness, leanness, and nervousness. For the past three years (since 1895) she has suffered from attacks of abdominal pain, especially on the right side, with nausea, fatigue, and loss of appetite. These crises terminate spontaneously after two or three days. The hepatic area seems painful, but there is no evidence of enlarged liver nor jaundice. At other times patient has attacks of acute gastric catarrh, which improved after a course of sulphur baths. In appearance she is small and thin, but very active. Examination of internal organs showed nothing abnormal. Her home is in the country, and her parents are in good health. Of numerous brothers none show any signs of this malady. Urea is present in small amount, and indol and skatol were present. Suspicion pointing to the presence of hepatic colic, had not been confirmed. In fact it is apparent that the site of the abdominal pain is at the junction of the ascending with the transverse colon.

She had three crises, agreeing more or less closely with one another up to the end of 1897. Treated regularly with hydrochloric acid, benzonaphthol, salt, and sulphur baths, she slowly improved. In February, 1898, a complete analysis of the urine showed total absence of all pathological products. I often have occasion to see her, and her condition remains good.

3.—A girl, aged 7 years; first seen in 1891; was then suffering from a severe follicular enteritis, from which she slowly recovered. During 1892 and 1893 she was in fair health, but in 1894 and 1895 she had several attacks of gastric catarrh, with weakness during the interval. Her physical development was slow, and signs of anemia were apparent. The appetite, however, remained good, and digestion, with the exception of the gastric crises, was free from pain. She had one or two fetid stools daily. Nettle-rash was often present. The urine at that time had been tested for urea only, which was present to the extent of but 4 grams per 1,000.

The treatment consisted of an appropriate diet. For a long time the child took only chopped meat, vegetables, rice, and potatoes, and some soups with milk. Milk was not well digested and fats were not tolerated at all. Bitter powders, hydrochloric acid, and benzonaphthol were administered. During 1897 the crises were very rare; urea was increased to 11 grams per 1,000. There was some gain in weight but the nettle-rash and fetid stools persisted. Salt and sulphur baths were prescribed. In March, 1897, she went through an attack of pneumonia. At this time, while at work upon the causation of the digestive troubles, I found both indol and skatol, but in small quantities. Urea had again diminished, but by April 9th it had mounted as high as 13 grams per 1,000, while indol disappeared entirely from the urine. During the rest of the year 1897, the child, who went on with the treatment during the Summer, was better. The nettle-rash, the last symptom of her digestive intoxication, disappeared, and by June, 1898, great improvement was noticeable. The child has grown, eats of nearly everything, and is in good health. She has had no treatment for a year.

This observation is not complete as to indican and phenols, but the few analyses that were made were enough to demonstrate their presence, especially at time of the crises. The progressive increase of urea, the disappearance of the fetid stools and nettle-rash, all went to show that we were dealing with a chronic gastro-intestinal intoxication.

4.—A girl, aged 4 years, of outspoken arthritic and nervous inheritance. Period up to completion of second dentition normal. For the past five or six months (January, 1897) she had suffered with fits of asthma on going to bed at night. General pallor and weakness were evident. The appetite was good, and there were no positive digestive troubles nor respiratory affections. She was placed upon iodide of potassium and arsenic with a course of salt baths at a thermal spring. There was no change until the Fall, when the child became pale and thin, with attacks of febrile gastric catarrh, without apparent cause. Analysis of urine (September, 1897) gave urea 10 grams per 1,000 with a strong reaction of indican and phenols. The child was placed upon the treatment already described.

On October 7th urea was 13 grams per 1,000; indol, absent. At the same time the child was better and the asthmatic seizures had disappeared. In November there was a slight relapse of the pathological state of the urine. The child did very well during the Winter of 1897–98, having taken the treatment at regular intervals. In February the urine was quite normal, and the Spring and Summer have brought no relapse.

5.—The last case concerns a little girl who has been under observation but a short time only, but who is a typical example of the illness in question. Her age is 4½ years, and up to her third year she was in good health. Her home was in the country and she only came to the city for medical consultation. The hygienic and dietetic conditions of her life were excellent. For the space of a year, and without apparent cause, she has had gastro-intestinal crises at regular intervals. They last for two or three weeks, and consist of the following phenomena: Loss of appetite, frequent attacks of vomiting, diarrhea, nocturnal fever, some abdominal pain devoid of special characteristics.

Called to see the child during one of these crises; I found her general condition good. She had lost no weight, but her flesh was soft and her musculature weak, especially about the abdomen; there was eventration at the umbilicus. The stomach has maintained its normal limits, and there was nothing to note in the condition of the liver and intestines, diarrhea being absent. The urinary analysis showed the presence of aceton, marked indicanuria, and phenol in abundance.

Further analyses made weekly revealed a progressive diminution in the amount of indican and aceton (this last named substance being found only in acute accidents). The proportion of phenol is still high. The child has been upon the treatment already shown to be indicated in these cases. The crises is over, and the digestion is quite normal.

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NOTES ON A RAPIDLY FATAL CASE OF TETANUS.

By Dr. Stanley M. Ward,
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LEWIS L., a boy aged 9 years, cut his left thumb with an ax, at the junction of the nail with the flesh, on Sunday, April 30th. His mother, alarmed at the rather profuse hemorrhage, took some cobwebs from a beam in an adjoining barn, clapped them on the wound, and bound a rag over all. During the week Lewis played around as usual, and no attention was paid to the cut. On Sunday, May 7th, the mother, more because she thought something ought to be done than for any other reason, removed the rag and poured some alcohol on the cobwebs, it certainly did not reach the wound. The next day, Monday, the boy complained of "belly-ache" and sore throat, to which symptom, and they grew more during the day, was added a feeling of soreness and stiffness of the whole body. I saw the boy at 10 P.M., finding a well-developed case of tetanus. The mouth could be opened only enough to admit of the tongue's protrusion. There was rigidity of the entire body except the arms, so that when told to sit up he could obey only by turning on his abdomen and pulling himself up by the bedstead. Abdomen hard; complained of intense pains therein, constant, but more severe at times. Temperature 102°. After working fully half an hour, I removed the cobwebs, and finding the wound well opened and pus discharging, did not enlarge it, but dressed it with a strong creolin solution and iodoform gauze. I ordered an opiate every three hours and hot applications to the abdomen. Monday morning found patient about the same, and ordered a drachm of the following:

℞ Hyd. chloral .... ʒiss
Soda bromidi........................... cix
Morphia sulph .... grs. i
Syr. simp .... ℥ii
M. Every two hours.

During the afternoon the first spasm occurred, succeeded by one at 4 and 9 A.M. Wednesday, nevertheless, when I saw him at ten in the morning, he seemed a trifle more relaxed, and could open his mouth more widely. Sweating profusely; passing urine plentifully, but bowels refused to act in spite of active cathartics. During the afternoon his father, who was caring for him, became discouraged, and relaxed the vigilance he had previously exhibited—children were allowed in the room, no pains were taken to keep the patient quiet, and the medicine, changed in the morning by omitting the morphia, was given with no regularity. In fact, all these matters, which appear to the laity of but little importance, but which, in a case like this, often determine between life and death, were left undone. A spasm occurred at 4 o'clock and a final one at 6 P.M. The patient died from asphyxia. It has been a question with me whether the toxic material was introduced at the time of the wounding or whether it entered with the dirt and debris used as a dressing.

THE WILLIAM F. JENKS MEMORIAL PRIZE.—The fifth prize of five hundred dollars, under the deed of trust of Mrs. William F. Jenks, will be awarded to the author of the best essay on "The Various Manifestations of Lithæmia in Infancy and Childhood, with the Etiology and Treatment." The conditions annexed by the founder of this prize are, that the "prize or award must always be for some subject connected with obstetrics, or the diseases of women, or the diseases of children," and that "the trustees, under this deed, for the time being, can, in their discretion, publish the successful essay, or any paper written upon any subject for which they may offer a reward, provided the income in their hands may, in their judgment, be sufficient for that purpose, and the essay or paper be considered by them worthy of publication. If published, the distribution of said essay shall be entirely under the control of said trustees. In case they do not publish the said essay or paper, it shall be the property of the College of Physicians of Philadelphia." The prize is open for competition to the whole world, but the essay must be the production of a single person. The essay, which must be written in the English language, or if in a foreign language, accompanied by an English translation, must be sent to the College of Physicians of Philadelphia, Pennsylvania, U.S.A., before January 1, 1901, addressed to Richard C. Norris, M.D., Chairman of the William F. Jenks Prize Committee. Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelope bearing the same motto and containing the name and address of the same writer. No envelope will be opened except that which accompanies the successful essay. The committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year. The committee reserves the right not to make an award if no essay submitted is considered worthy of the prize. James V. Ingham. M.D., Secretary of Trustees, June 15, 1899.

EDITORIAL COMMENTS

On the Safety of Lumbar Puncture in Children

Whenever a new operative procedure promises well, both as a diagnostic and therapeutic resource, and is well adapted for routine employment because of its technical simplicity, our wonder, excited at first because such a contribution to progress was not made long ago, becomes doubly great when we perceive how little headway has been made by the profession in doing justice to the innovation. The operation of lumbar puncture, devised by Quincke in 1891, has by no means become a popular procedure despite its many enthusiastic advocates. It is very evident that the technical difficulties, slight though they be, or a belief in the meddlesome and dangerous character of this form of operative interference, is held to more than offset the possible benefits which this operation might confer upon diagnosis and therapy. In revising the study of this subject to date, the fact must not be ignored that the operation of lumbar puncture has an independent relationship to the science of pediatrics. It is quite probable that in the case of adults, the technical difficulties may be considerable, the field of usefulness circumscribed, and the danger of accident great when compared with the results of pediatric practice. Pfaundler, working in the clinic of Prof. Escherich, of Graz (where so many important contributions to pediatrics have been made), has recently completed a series of 200 lumbar punctures in children. With regard to the safety of the operation, he reports no serious accidents, while pain, hemorrhage, and danger of infection proved to be insignificant. A review of the literature assures him that other observers have likewise been satisfied with the results which they have obtained in children. Mishaps of any sort seem to be isolated and not inherent to the operation itself. Pfaundler states that owing to the superficial position of the vertebral arches in the child, together with the relatively greater spaces between them, puncture is readily effected. The lowest interspace or lumbo-sacral hiatus is the locality to be chosen for the puncture. The original puncture should always be made with the child sitting erect, in order to tap the lowest point of the column of cerebro-spinal fluid, and thereby to secure a representative drop of sediment. The serious accidents which have been reported in connection with puncture have either happened to adult patients or have been due to intentional puncture into the ventricle, which is a very different operative procedure from tapping the subarachnoid space.

On the Utility of Lumbar Puncture in Children

This operative procedure has a double field of usefulness, as it not only aids materially in diagnosis, but fulfils therapeutic indications as well. Under the head of diagnosis, the first step, according to Pfaundler, is to determine the subarachnoid pressure. When this is taken in the erect sitting posture it varies between 20 and 25 mm. of mercury in health, while in chronic hydrocephalus or tubercular meningitis it may run up to 40 mm. and even much higher. The difference between the pressure in the erect and recumbent postures is nearly one-half, owing to the disappearance of the hydrostatic pressure when the child lies down. After death the pressure, falls by more than one-half, on account of the cessation of the heart's action. In a dead child, in the recumbent posture, the slight remaining pressure (about 2 mm.) is due to the elastic wall of the subarachnoid sac. The subarachnoid pressure is therefore complex, and decomposable into vascular or vital, hydrostatic, and elastic. These studies in manometry, while of much interest and significance, are not adapted for routine clinical work outside of hospital practice. With regard to the clearness of the fluid obtained by tapping, the admixture of decomposed blood implies the presence of an antecedent trauma or pachymeningitis. If the fluid is clear, all inflammatory affections, aside from tubercular meningitis, may readily be excluded. In the latter disease the fluid is always clear at the outset and may even remain so throughout, but there is often present a peculiar cloudiness or opalescence. In the same affection the formation of a peculiar coagulum upon standing is almost pathognomonic. Much may be learned from a study of the sediment, as in meningeal disease of any sort, abundant pus and blood corpuscles, and desquamated endothelia from the ependyma are present. Another almost certain indication of the presence of tubercular meningitis is the occurrence of a large amount of albumin in the fluid. The bacteriology of the subarachnoid fluid comprises the constant presence of the tubercle bacillus, pyogenic cocci, and Weichselbaum's meningo-coccus in the corresponding diseases tubercular, suppurative, and epidemic cerebro-spinal meningitis. With regard to therapy, the indications for puncture are to lower intra-cranial pressure and thereby remove symptoms due to pressure and irritation (headache, delirium, convulsions); and to drain away pathogenic bacteria and toxic products. There is no doubt that puncture has been successful in curing cases of epidemic cerebro-spinal meningitis.

Denicotinization of Tobacco

On another page of this issue of PEDIATRICS will be found an abstract of an article by Dr. Heinrich Stern, from which it appears that the active principle of tobacco may be so successfully removed or neutralized that cigars made from such tobacco, while retaining the full flavor of the natural weed, exert no physiological action upon the smoker, even if he has never before used tobacco. This subject must interest the pediatrist, who looks upon boys at the age of fifteen or sixteen as naturally belonging to his clientele. The sense of the community appears to regard the use of tobacco at those ages as pure vice, and therefore utilitarianism can undertake nothing which appears to sanction an unmitigated evil; yet the first impulse of a humanitarian (who realizes the physical, mental, and moral ills to which nicotine may contribute in the growing boy) would doubtless be in the direction of substituting harmless for harmful tobacco, since the effects of laws prohibiting the sale of tobacco to boys are largely nullified by various circumstances. However, it is not likely, for various reasons, that this subject of "modified tobacco" will ever be seriously brought before law-making bodies or conventions of sanitarians or pedagogues. The idea could be utilized only in the family circle. The worldly-wise and diplomatic father, who, when he discovers that his boy has acquired the smoking habit, offers no objections, provided his offspring supplies himself from the paternal cigar-box instead of making his own choice, is the sort of a Roman parent who would probably not be slow to avail himself of the advantages of harmless tobacco under those circumstances.

Infant Mortality in Foundling Asylums

A high mortality among foundlings has come to be looked upon in various parts of the world as something inevitable. The causes which contribute to this end include the exposure and hardship which often precede the reception of the foundling, absence of ordinary maternal solicitude after admission, and a mysterious something which, for the want of positive knowledge, has been termed "hospitalism." A definite epidemic or endemic affection is not demonstrated, as a rule, yet the children do not thrive, and their lives cannot be saved. This calamity attains such proportions in some cities that the abolition of the foundling asylum has been seriously proposed. Dr. Szalardi, of the Budapest Foundling Asylum, would attribute this mortality almost entirely to separation of the child from its mother. For some years the institution over which he presides has refused to admit a foundling unaccompanied by its mother, provided, of course, that the latter is well enough to take charge of her child. Those without mothers, and they are few in number, have wet-nurses assigned them. Suspicious cases of enteric disorders are isolated, and by following this plan a dangerous epidemic was, upon one occasion, cut short. The mortality in this institution amounts to but 15 per cent., while in some of the German cities it is three or four times as great. Dr. Finkelstein comments rather warmly upon Szalardi's article, and accounts for the high mortality in certain cities by local conditions alone. In the Berlin institutions nearly one-half of the foundlings are hopelessly condemned to die before their admission. No maternal care nor breast-milk could alter their fate. Finkelstein defends artificial feeding, and believes that its future is very bright, and that it will yet do much good work in infant asylums. A recent Paris thesis on the subject of sterilized milk, which work contains notes of over 130 cases, shows that children may gain weight with equal facility when sterilized milk is substituted for breast-milk. This controversy, which threatens to become widespread, between the two methods of management of infants who are public charges, cannot fail to lead to a better understanding of the causes of local mortality rates, and of the best methods of saving the babies lives.

SOCIETY REPORTS

NEW YORK ACADEMY OF MEDICINE—SECTION ON PEDIATRICS.

Stated Meeting April 13, 1899.

HENRY KOPLIK, M.D., Chairman.

Cases of Goitre in Children—Cretinism, Basedow's Disease, Tachycardia.—Dr. CHARLES HERMANN presented a series of cases of this kind. He said that struma might be defined as an enlargement of the thyroid gland, not entirely due to hyperemia, and unaccompanied by inflammatory symptoms. In the newly born infant the right lobe of the gland was the larger, and the gland was situated higher up than in the adult. Struma was comparatively rare in this country. It was most common between the ages of seven and ten. The lateral lobes were the ones chiefly involved. The strumas might be divided into congenital and acquired. The former usually involved the entire gland, and nearly surrounded the trachea. This variety showed a tendency to disappear within a few weeks, but while present it caused marked disturbance of the respiration and circulation. The acquired form was subdivived into (1) endemic; (2) epidemic; and (3) sporadic.

The first case presented was one of dwarfism with idiocy. It was a girl, 12 years old, born of healthy parents. The father's sister had epilepsy. The brothers were said to be normal, but the sister was also very backward, and had an enlargement of the thyroid gland. The child was anemic, but there were no myxedematous changes. The right lobe of the thyroid was somewhat enlarged. Thyroid treatment had resulted in some improvement. The second case was one of cretinism, occurring in a boy of 4½ years. As the child had been under treatment with thyroid for some time, many of the more prominent symptoms had disappeared. The parents of this child were cousins. The third case was one of well-marked struma, occurring in a girl of 6 years. About four months ago an enlargement of the thyroid gland had been noticed, more especially of the right lobe. The child was fairly developed; the chest was negative: the heart was practically negative, but the pulse was 108. The child had adenoids. The next case was one of struma with tachycardia. The symptoms present were: weakness, palpitation, dyspnea, and syncope, on exertion. The child was rather emotional, and in addition had adenoids, enlarged tonsils, and slight enlargement of the thyroid. The heart's action was irregular in force and frequency, the pulse being 98. The urine contained a trace of albumen. The hemoglobin was 70 per cent. The slight enlargement of the thyroid and the tachycardia possibly indicated that this case was an incipient form of Basedow's disease. The next case, a sister of the preceding, was 7 years of age. She had been recently noticed to be nervous and easily frightened, and that she suffered from palpitation on going upstairs. The heart action was rapid and somewhat irregular; the pulse was 102 to 108. According to statistics the thyroid treatment gave good results in a considerable proportion of these cases, particularly young children. The next case was one of Basedow's disease. The speaker said that tremor was not usually present in children. As a rule, the frequency of the pulse was not so great as in adults. The thyroid was not much enlarged, and the exophthalmos was either not marked or was absent. The patient presented was a girl of 12 years. The child when 5 years old had had rheumatism, and finally an attack of chorea, lasting a number of months. Since this time it had not fully regained its health. Two months ago there had been another slight attack of chorea. The eyeballs at the present time were somewhat prominent, and the child was pale and nervous. The only eye symptom was an insufficiency of the internal rectus on the left side. The thyroid was enlarged. Auscultation of the heart showed the presence of a mitral insufficiency. In this case it was worthy of note that, contrary to the usual rule, the chorea had preceded the Basedow's disease. Some observers had claimed that there was a direct connection between these two diseases, and that underlying them both was rheumatism. The mitral insufficiency in this case was probably connected with the chorea. This child had received the thyroid treatment and had improved under it, although this was not the rule. Some cases of Basedow's disease, it should be recalled, presented certain myxedematous symptoms, or were followed by myxedema. If the disease were due to increased secretion of the thyroid gland, it might be supposed that in time the secretion became exhausted, and that atrophy resulted. Basedow's disease in children was comparatively rare, the number of recorded cases under ten years of age being fifteen, the youngest of which was two years and a half old. Under the age of fifteen, forty-three cases of this disease had been reported.

Dr. CHARLES G. KERLEY said that he had only seen three cases of Basedow's disease in children under fifteen years of age. One of these had improved very considerably under the thyroid treatment, and for this reason the case had passed from under observation after about three months. In another one of these cases, in a child of twelve years, the pulse had been between 140 and 160; the eyes had been extremely prominent, and the goitre large, and the tremor had been so great that the child had had to be assisted in walking. Under the administration of 2½ grains of thyroid extract, three times a day, the child was able in four weeks to walk without assistance, and in the course of a few months she seemed to have been restored to her former health. This child had been kept under observation for a year and a half. It had not been possible in this case to increase the dosage beyond that given because of the gastric pain induced. This child had been previously treated according to all the usual and approved methods, but without any benefit.

Dr. LOUIS FAUGERES BISHOP said that while he was not familiar with Basedow's disease in children, he had seen a great many cases among the adults at the Vanderbilt Clinic, and had not observed any benefit from the thyroid treatment.

A Case of Intussusception.—Dr. DAVID BOVAIRD reported for Dr. Northrup a case of intussusception occurring in a child of nine months. The illness had begun with crying and restlessness, but within a few hours a sausage-shaped tumor in the abdomen was evident. Food was vomited but once. After a large enema, there was a stool containing mucus and blood. There was slight fever. Under complete chloroform narcosis a high rectal enema of hot water had been given, the reservoir being three feet above the child. During an explosive effort on the part of the child, the tumor had suddenly disappeared and had not returned. On the evening of the second day the child had become comfortable, and by the next day the stools had become normal. There had been no return of the symptoms during the three months which had elapsed since this treatment. In connection with this case, reference was made to a case in the Presbyterian Hospital, occurring in a child of 7 months, in which reduction had been effected in the same way. Dr. Northrup was of the opinion that it was worth while to spend a little time in such efforts in recent cases before resorting to surgical interference.

Dr. WALTER LESTER CARR said that in the treatment of intussusception by the pressure of water it had seemed to him that the pressure under which the fluid was injected might be diminished if time were taken and more fluid injected. Ordinarily a pressure of three to five feet would be sufficient. A soft catheter should be introduced from six to ten inches, and it was better to use only a very moderate pressure for a time after having inserted the catheter.

Dr. HENRY KOPLIK said that he had recently seen a case in which the bowel had been ruptured by using excessive pressure.

A Case of Abscess of the Lung Following Pneumonia; Resection of Ribs; Recovery.—Dr. B. VAN D. HEDGES, of Plainfield, reported this case. A child of 6 years had been first seen on March 20, 1896, three weeks after the onset of a pneumonia. The face at that time had been anxious, the pulse 170, respiration 65, and temperature 104.8° F in the rectum. There was slight bulging in the intercostal spaces, and the physical signs of extensive effusion. Exploratory puncture had been made and sero-purulent fluid withdrawn. A portion of the seventh rib had then been excised and over a pint of this fluid evacuated. The pulse and temperature had improved promptly after the operation, but there were frequent chills and sweating, and by April 8 the evidence of an accumulation of pus had become so evident that further operation had been decided upon. A needle introduced into the seventh space at the axillary line had withdrawn pus, and with this needle as a guide an incision had been made into the lung and the abscess evacuated. For the next ten days the temperature ranged from 103 to 105.5°, and the discharge of fluid had been considerable and offensive. By May 18th the wound had entirely healed. No tubercle bacilli were found in the sputum. The Summer had been spent in the mountains, and his general condition had thereby been greatly strengthened. The boy was now (three years later) in excellent physical condition, and able to take part in all the active sports of boys of his age. He was then presented for examination.

Dr. Louis Faugeres Bishop remarked that the case was interesting from a diagnostic standpoint, because of not finding pus in the pleura and yet finding it in the lung itself.

Dr. Koplik said that he had met with two exactly similar cases to the one just presented. In one a surgeon had found nothing in the pleural cavity, and had refused to explore the lung. The ultimate result he did not know. In another case he had himself explored and removed about 50 cc. of pus. The rib had been immediately resected, but no pus had been found. The child had been operated upon subsequently, and an abscess of the lung detected and evacuated.

A Case of Crescent Malaria in a Child.—Dr. Henry Heiman reported this case, and exhibited the specimen of blood under the microscope. He said that one year ago Dr. Osler had made the statement in this academy that sporadic malaria of the æstivo-autumnal type never occurred endemically north of the Chesapeake Bay, and this seemed to have been the experience of the hematologists of New York. The case to be reported was that of a child of five years, who had been born in this city, and, according to the mother, had never been out of the city. At first it had lived on the lower east side, and afterward on the upper east side. On first coming under observation there had been a large spleen, and microscopical examination of the blood had revealed the presence of a few crescents. After administering quinine, the fever had disappeared, and the spleen had been reduced in size. He personally believed that crescent malaria was endemic in New York City, and that if the blood were more frequently examined, crescent malaria would be more often found.

Dr. Bovaird said that he had seen one case at the Presbyterian Hospital in which the manifestations of malaria had developed during the course of typhoid fever, and examination of the blood had shown the presence of the crescents. There had been nothing in the history pointing to malarial infection, and the man had been for years a resident of this city.

Dr. **Heiman** said regarding the treatment, that the crescent form was exceedingly obstinate. He believed it important to give moderate doses of quinine regularly for one week, and and then give an opportunity for the spore-forming parasites to develop into full-fledged organisms before resuming the quinine. The object was to give the quinine intermittently in imitation of the well-known method of fractional sterilization. This method seemed to him comparable to the treatment of syphilis.

Enlarged Liver and Spleen in Infancy—Report of Cases and Study of the Etiology.—Dr. W. N. **Berkeley** read this paper. (Pediatrics, May 15th, 1899.)

Dr. **Kerley** said that those who had seen the most of syphilis in children would agree that enlargement of both liver and spleen was very commonly present, yet it must not be forgotten that the liver in infants was enlarged in connection with many other conditions. Hepatic enlargement was very frequently observed in infants suffering from athrepsia. He now had under his care a child of ten years with cirrhosis of the liver, marked ascites and a history of malaria, but without enlargement of the spleen. The child had been tapped twice before coming to him. According to the history, the child had had three or four attacks of malaria a year, requiring thirty or forty grains of quinine to control them. The case seemed to him a clear one of cirrhosis, originally one of malarial origin. He thought that in two-thirds of the cases of congenital syphilis coming under his care, enlargement of the liver and spleen was present. As an early symptom it seem to him more important than the eruption.

Dr. **Bovaird** said that he had had under observation for two years two children, sisters, one 13 and the other about 4 years of age. The older child had a spleen which extended from high up in the axilla down to the anterior iliac spine on the right side. This enlargement, according to the history, had been first noted when the child had been 2½ years old, and had steadily increased since that time, in spite of various methods of treatment, chiefly those having for their object the relief of a toxemia resulting from either syphilis or lead. He had found no increase in white blood cells. The younger child had a splenic tumor which extended down as far as the umbilicus. The liver was also symmetrically enlarged, and extended slightly below the umbilicus. The liver was also symmetrically enlarged, and extended slightly below the umbilicus. Treatment for syphilis and for lead had had no effect on this case. The speaker said that from a study of the literature, he had come to the conclusion that there were forms of enlargement of the liver and spleen which could not be explained on the basis of malaria, syphilis, or rachitis—certainly none of these were present in the cases to which he had just alluded. The parents of these children were perfectly well, and had been carefully examined for syphilis, with an entirely negative result. The blood had been repeatedly examined, and quinine given, but with an equally negative result, thus excluding malaria.

Dr. VANDERPOEL ADRIANCE referred to a frequent enlargement of the liver in infants, not specially noticed in the text books, *i. e.*, fatty infiltration. The pathologist very frequently encountered such livers in infants, and the increase in size was often quite marked. The liver under such circumstances usually presented a slight pink color. This form of enlargement of the liver was seen especially in connection with chronic intestinal disorders, and was not associated with icterus.

Dr. KOPLIK said that there was nothing more common in infants under a year old than enlargement of the liver and spleen, especially the infectious variety associated with icterus. He had just seen a case of very decided enlargement of the liver, accompanied by icterus, and resulting from infection from the gut. The child had been suffering from appendicitis, and had not been operated upon. Recovery had taken place without operation, and the liver and spleen had retrograded without special treatment. He had records of about a dozen cases of infectious icterus in infants, in none of which had there been any signs which could be reasonably attributed to syphilis.

PRACTICAL NOTES

The Modification of Cow's Milk for Artificially Fed Infants.—In order to prevent the firm clotting to which cow's milk is prone, some alkaline solution may be added, or some prefer to use a small quantity of a mucilaginous or other thickening substance, such as barley-water, a solution of gelatine, or one of the prepared foods, which act mechanically in obviating the formation of firm clots. Mellin's Food may be used; in this the starch has been converted into dextrin and maltose. —From "Food in Health and Disease," by I. BURNEY YEO, M.D., F.R.C.P.

Tubercle Bacilli in Milk.—HAMMOND recommends the following as a simple and rapid method of detecting tubercle bacilli in fluids, such as milk. Add to the milk a 5 per cent. solution of glacial carbolic acid so as to check the growth of any organisms present. Centrifugalize 15 cc. of the milk for fifteen minutes and treat the precipitate with 3 cc. of 5 per cent. solution of caustic potash for three minutes; add distilled water to make up to 15 cc., and again centrifugalize for twenty minutes. The sediment which has by this treatment been freed from fat and proteid matter is now ready for microscopical examination. It is claimed by this method bacilli may be detected in fluids in which they are so sparsely scattered as to give negative results when inoculated into guinea pigs.—*Móntreal Medical Journal.*

Fresh Meat Juice is still made use of altogether too little in nourishing the sick, although its value far exceeds any artificial preparations which are employed for rehabilitating the blood and nutrition. "At all ages—thus Dr. KLEIN (Giessen)—administered either pure or added in various combinations to the food and drink, or else used as the best and only constituent of clysmata for rectal feeding, fresh meat juice will do everything which may only be expected of a blood-forming and invigorating tonic. As a rectal food it cannot be excelled, and it is astonishing how the rectum, through its long continued use will remain quiescent; if properly administered, it will be always excellently and perfectly absorbed." Ziemssen wrote in 1894: "It is greatly to be regretted that so much of German money is spent in foreign countries for imported beef extracts, the therapeutic value of which is at least very problematical, when we may prepare the most wholesome and efficient meat extract in every drug store by means of expression from fresh meat." The agreeable and easily covered taste of fresh beef juice, its fluid form; its percentage of albumen, flesh basis and coloring matter of the blood, in perfectly natural combination; its exceptionally easy digestion, which permits its employment even in infants (pedatrophia, rachitis, diarrhea, etc.), and the fact that it will not irritate the most delicate stomach; its appetizing quality, and its power of rapidly improving the appetite—all these are extraordinary good qualities. Children of medium age will take without objection 100 grams a day, and that for a long time, and it will always markedly improve the appetite and the complexion, the general condition and strength; younger children and infants may receive three to five teaspoonfuls, sweetened with sugar. Given in clysmata, infants will perfectly absorb 50 grams, children of middle age 100 grams daily, for a long period. The reason this remedy is not generally employed is probably because it does not keep very well. The juice should always be freshly expressed and used at once. Cheap meat presses may, however, be obtained now; that invented by Dr. Klein will express 40 grams of juice from 100 grams of meat.—*Berl. klin. Wochenschr., 1898, No. 26*).

For Whooping Cough, LANCASTER recommends the following:

℞	Tinct. Bellad.	5.0 (1.15 drachms)
	Phenacetini	2.5 (41 grains)
	Extr. Castan. Vesc.	30.0 (8.1 drachms)
	Spts. Rectificatis ad.	50.0 (13.5 drachms)

M. D. S. For children over one year, 10 drops every two to six hours; for children 10 years of age, a teaspoonful.

The Treatment of Eczema of the Eyelids in Children is conducted by ANTONELLI, as follows: The muco-purulent form of conjunctivitis is treated by the frequent application of a weak corrosive sublimate solution (0.05:400,0 aqu. dest. containing no alcohol) and by the instillation of nitrate of silver

(0.05:15,0) or protargol solution (2.0–4.0:100,0); blepharo-spasm is suppressed by cold eye or face douches applied thrice daily for a few seconds, or by an ointment of cocaine (0,15–0,2:5,0 vaseline), cocaine may also be combined with the remedy for eczema itself:

℞	Zinci Oxyd	
	Bismuth Subnitr., āā	0.3 (4.6 gr).
	Cocain Mur.	0.5 (7.5 gr.)
	Lanolin	
	Vaselin Pur., āā	10.0 (2.6 dr).

The most effective local remedies for dermatitis of the lids are non-irritating ointments, for example, white precipitate (1 per cent.), calomel (2–4 per cent.), or a borosalicylic salve:

℞	Acid Boric	
	Acid Salicyl., āā	0.5 (9.5 gr.).
	Lanolin	
	Vaselin, āā	15.0 (3.85 dr.).

When the skin is exceedingly inflamed, powders are also used. In stubborn cases (torpid scrofula) stimulating salves are prescribed:

℞	Resorcin	
	Acid Salicyl., āā	1.0 (15.4 gr.).
	Zinci Oxyd	2.0 (30.8 gr.).
	Vaselin	20.0 (5.2 dr.).

The removal of all scabs, thorough cleansing of the nose, opening of abscesses, and looking after the general health, should of course not be neglected.—*La Medic. inf., 15, 3, 95.*

To Disguise the Taste of Cod Liver Oil, BRICEMORET gives the following formula:

℞	Ol. Jecoris Asell	400.0 (13½ oz.)
	Syr. Bals. Tolutan	200.0 (6½ oz.)
	Tint. Tolutan	gtt. xii
	Ol. Caryophyll	gtt. ii

To be thoroughly shaken before use. One tablespoonful two or three times daily.—*Correspond. f. Schweitz. Aertze, 1898, 2.*

ABSTRACTS

THE TOXICITY OF TOBACCO AND A METHOD OF ERADICATING IT.

HEINRICH STERN (*Med. Review of Reviews, April 25, 1899*) begins his paper with an account of the occurrence and properties of nicotine, which most authorities hold to be identical in physiological action with the plant itself. The alkaloid or plant is a powerful depressant, and also perhaps an irritant poison as well; this point is difficult to demonstrate in the presence of the sudden depression simultaneously induced. The vapor of the plant is poisonous, probably because of the volatility of the nicotine; and, as one would expect, is more poisonous in a hot than in a cold atmosphere. Working amid tobacco emanations produces a slow poisoning, one of the most striking symptoms of which is the tobacco amblyopia. Both man and animals readily acquire an immunity toward the action of tobacco. When tobacco is burned, its smoke contains little or no nicotine, because it has been decomposed. The products of its decomposition, however, are present in the smoke, and these with other volatile products of combustion render the smoke a highly complex poisonous substance. The water pipe is the best device for neutralizing the poisonous properties of the smoke. In smoking cigars and cigarettes, the system is exposed to the toxic action of the tobacco by the direct contact of the mouth and weed.

Ordinary chronic nicotine poisoning is made up of the following symptoms: Catarrh of the upper respiratory passages, dyspepsia, asthma, smokers' heart, muscular tremor, decline in weight, decrease in sexual excitability, amblyopia and perhaps more serious affections (neuroses and psychoses).

Stern prescribes adonidine in doses of five milligrams each for tobacco heart, combined with carbonate of ammonia ten centigrams, and camphor three centigrams.

Many attempts have been made of free tobacco from its nicotine, but no one as yet has completely solved the problem. As a rule, the smoker does not relish denicotinized tobacco. Still some tobaccos originally contain but a very small proportion of the alkaloid, and are largely consumed by the residents of the countries where such tobacco grows.

Stern thinks the method of Gerold the best yet devised. It consists in treating tobacco with a decoction of tannic acid and oil of origanum. After the tobacco has absorbed the liquid it is treated with moderate pressure and heat.

With cigars made from tobacco thus prepared, Stern has experimented with patients who were non-smokers, and got practically no disturbance of the heart, respiration or nervous system, even when three cigars were smoked in succession. The odor and flavor of the tobacco suffer no change. The proportions of the decoction are as follows: Tannic acid, 15 grams; essential oil of origanum, 30 grams; water, about 3 pints—to be boiled down to 36 ounces.

A CASE OF SEVERE CARBOLIC ACID POISONING ENDING IN RECOVERY.

M. Kamm (*Therap. Monatch.*, *1898*, *xii.*, *169*) states that although numerous cases of carbolic acid poisoning, ending in death, have been reported during the past thirty years, we are only in possession of but few observations on grave intoxication (by otherwise fatal doses) which have ended in recovery.

Dora G., 6 years of age, daughter of a merchant, became ill on December 26, 1897, with a fever, anorexia, and debility, which was accompanied on the succeeding day by a bad odor from the mouth. As the disease did not seem very severe to the parents, Kamm was only called in on December 29th. He found marked diphtheria present (white deposits on both tonsils as well as on the uvula, moderate swelling of the glands of the neck; temperature 38.5). As the disease had already existed over three days, and there was otherwise no reason to suppose that the disease would run a rapid course, Kamm did not propose antitoxine injections, and prescribed liquor ferri 3:200 internally and a gargle of lime-water. The further course of the disease corroborated his favorable prognosis, as only a vestige of deposit remained on January 1, 1898, on the left tonsil and on the left lateral surface of the uvula; otherwise the child, aside from some weakness and anorexia, seemed pretty well. On the same day, in the forenoon, about 11.30 o'clock, the mother administered to the child a full teaspoonful of pure carbolic acid in mistake for the medicine, as was determined subsequently by measurement, the quantity given was at least 4 grams. The acid had been purchased by the mother, unknown to Kamm, for disinfecting purposes. The attention of the mother was at once drawn to her fatal mistake by the screaming of the child, and she had enough presence of mind to pick up the child and carry it at once to the psychiatric clinic, which was situated in her immediate neighborhood, where Dr. Hahn and Dr. Heilbronner washed out the patient's stomach about five or ten minutes after the accident, until there was not the least odor of carbolic acid left in the irrigation fluid, and followed this by introducing a solution of Karlsbad salt in milk into the stomach in the absence of sulphate of soda. The child had already become unconscious during the short time it had to spend in the waiting room. When Kamm saw the child, about a quarter of an hour later, the pulse could barely be recognized, respiration was noisy and at times intermittent, the pupils contracted, with absence of light reflex; the lips, tongue, gums, tonsils, and the mucous membrane of the pharynx were covered with a white deposit, due to the caustic. After subcutaneous injections of camphor had been made, the patient opened his eyes again about 10 o'clock, and became conscious. The urine passed that afternoon was of a dark-green color. From this time on the child gradually recovered more and more; the urine assumed a brown color with a greenish tint on the following days; on standing, it rapidly became slightly turbid; a chemical examination disclosed a large percentage of albumen. Internally, lime-water and a diuretic natural water (Wernarzerquelle, Brückenau) was administered. Nevertheless the quantity of urine diminished more and more (at the most there was passed ¼ litre in twenty-four hours, its color remained turbid to brown, the albumen increased, and microscopical examination revealed large quantities of fatty degenerated kidney epithelium, and some hyaline cylindrical casts, partly in a state of fatty degeneration. With this there was present an aversion to the taking of any food, greyish-white deposits still covering the tonsils and the posterior wall of the pharynx on January 7th. Clysmata of milk were therefore temporarily administered. The condition of the patient had therefore again become critical from the appearance of a toxic nephritis. The elasticity, however, of the young and previously always healthy organism overcame this severe complication also. From January 12th onward the amount of urine passed became more copious; food was again taken; the amount of albumen fell to ½ per cent. (Eschbach). On January 16th the child was again perfectly lively, had a good appetite, the deposits in the mouth and throat had been all thrown off, and the urine had increased to a litre in twenty-four hours; its color and physical properties had now returned to normal, so that the patient was dismissed as cured.

As one tablespoonful of carbolic acid usually kills an adult in a very short time, 4 grams in a 5-year-old, which had previously been weakened by diphtheria, may undoubtedly be considered a lethal dose. The fortunate issue in this case must certainly be ascribed to the quick irrigation of the stomach, which, in this case, was performed within a few minutes after the poisoning; besides, most cures after carbolic acid poisoning have taken place after stomach irrigation.

A CASE OF POISONING BY CREOSOTE.

Fr. Bayer (*Corresp. des Ver. dentscher Aerzte im Reichenberg, Oct. 15, 1897*) describes the following case:

A boy, 1¾ years of age, drank, when unobserved, one drachm of crosote from a bottle containing the latter liquid. Three hours later Bayer found the child in a comatose condition, with closed eyelids, very pale, cool extremities, hardly perceptible pulse, noisy respiration, lips of a whitish color. After two hours more death resulted.

Section.—The mucous membrane of the mouth is white, as though lunar caustic had been applied to it, the mucous membrane of the stomach is also somewhat corroded, the lungs were overcharged with blood, the blood in the heart strongly coagulated; the brain does not present any pathological changes. Especially marked is the change of the blood to a brighter red when exposed to the air. The symptoms of creosote poisoning are very similar to those of carbolic acid intoxication; creosote being only a mixture of ethereal derivatives of carbolic acid, especially guajacol and kreosol. It is true that much depends on the fact whether we are dealing with creosote derived from beech--wood tar or from coal-tar; the former contains very little or not any pure carbolic acid, while the latter contains a large proportion. The more carbolic acid the creosote contains the greater will be the similarity of the symptoms to those of carbolic acid poisoning. Thus we rarely miss convulsions in the latter, but in the case reported above there was not the slightest sign of any. That the case ending in death was probably due to the sickly condition of the child, in which a slight tuberculous affection of one lung and signs of a pleuritis were discovered at the autopsy.

THE TONSILS AS PORTALS OF ENTRANCE FOR GRAVE GENERAL INFECTION.

F. Jessen (*Munch. med. Wochenschr., 1898, xxv., 709*) has demonstrated that "rheumatoid" affections as well as crytogenetic septicemia, pneumonia, etc., may quite frequently make their entrance into the economy by way of the tonsils, the surfaces of which may have a normal appearance; in their interior, however, small purulent foci will be discovered, which proves that they have been penetrated by micro-organisms. He points out that infectious diseases running a chronic course, especially scrofulosis, must also be taken into account. The child does not become affected with vegetations of the adenoid tissue of the tonsils, especially of the pharyngeal tonsils, because it is suffering from a mysterious scrofulosis diathesis, but an inflammation of this tissue is started by bacterial invasion, and the micro-organisms now pass through the lymph-channels to the eye, ear, face, lips, etc., and excite here new inflammatory processes, which are frequently carried by the fingers to the integment of the whole body.

If now the inflammatory adenoid vegetations are removed by operative interference, the whole scrofulous symptoms disappear very rapidly; if secondary, tuberculosis has not yet occurred, for the reason that the original disease focus has been removed. Jessen reports three personal observations, which illustrate this proposition, while with anti-scrofulosis treatment alone, a very slow improvement only is obtained, and recurrence is not rare. After the operation, it is perfectly proper to use anti-scrofulosis remedies to remove any remnants which may have been left behind; the main point, however, is the removal of the focus of infection itself.

EXTENSIVE ULCERATION OF THE MOUTH, PHARYNX, AND LARYNX.

Weil (*Wien. klin. Wochenschr., 1898, xi., 547*) presented a girl 10 years of age to the Wiener laryngologische Gesellschaft with the following history:

The patient had been sent to the country two years before to recuperate from a pleuritis, where she was said to have gained a brilliant color at first; for about a year she complained of pain in the mouth, especially during eating, but later also on swallowing. During the middle of June of the present year she presented a dotted eruption on her whole body, which was especially marked on the face and neck, and is said to have been complicated with a fever lasting five days. Since then the affection of the mouth has been more severe, the child was unable to eat and sleep, and was therefore sent back to her parents in Vienna, where she came under medical treatment in the early part of April. There were found present extensive shallow, small irregular ulcerations, which involved nearly the whole of the hard palate, the pharynx, the epiglottis, the ary-epiglottic fold, the vallecula and both sini pyriformes; the uvula appeared diminished; in reality, however, it was only retracted by a line of cicatrices which ran backward along the middle of the palate; the whole gum, especially that of the upper jaw-bone, was enormously swollen, bled easily, and was covered by yellowish, fetid smelling ulcers; the tongue and buccal mucous membrane presented here and there a few aphthous ulcerations on its surface, however, covering nearly the whole mucous membrane, and on the vermillion border of the lips a large, shallow, soft ulceration was seen. Temperature 38.3. The child is said to have taken large quantities of raw milk; it was not, however, discovered that any mouth and foot disease was present among the cattle of the village. With this affection at first in view, Weil ordered a 2 per cent. solution of creosote as a mouth wash, and painted those ulcerations which came into view with a 5 per cent. solution of nitrate of silver; the larynx was not treated. This treatment gave astonishing results, for after a few days the fever, the pain, and the fetor already disappeared; the child was able to eat and sleep; the tumefaction of the gums rapidly disappeared, the ulcers began to look clean, and the palate in great part has cicatrized; the ulceration of the upper lip, on the other hand, has extended and that of the epiglotis seems to have deepened. The vocal cords, as far as can be seen of their posterior portion, are intact. Voice is clear. The apex of the left lung suspicious. Syphilis cannot be elicited. A microscopic and bacteriological examination of the pus, demonstrated the presence of staphylococci especially, also short chain cocci, and short, thick, rod-shaped cocci; the search for bacilli was negative.

Weil believes that we are dealing here with two distinct processes, namely, with an old, slowly extending tuberculosis of the palate, pharynx, and larynx, and with a recent ulcerous stomatitis, occurring obviously after morbilli.

Dr. Grossman, believes that what we see in the mouth and laryngeal cavity of the patient, does not make the impression of lupus, but of tuberculosis, whereby it is certainly remarkable, that such an intense local process did not affect the general health more, we also find cicatricial tissue very rarely in the centre of tuberculous ulcers, and finally the aspect of the mucous membrane of the hard and soft palate resembles that of lupus. On the other hand, however, the infiltration of the ary-cartilages, the glimmering through of yellowish-white particles (in all probability miliary nodules) through the mucous membrane point to tuberculosis; of especial characteristic import, however, is the nodular swelling of the gums. Grossman has lately met with three cases of pulmonary phthisis in which a similar swelling of the gums, like beads on a string, was present, and which he would like to name "gingivitis nodosa," in which each single nodule could be mistaken for an epulis.

Dr. Ebstein remarked that it was against all experience to meet with such important tuberculous affections in the pharynx in the absence of pulmonary symptoms; furthermore, that he was struck by the difference in the intensity of the process in the gums of the upper jaw, as contrasted with the lower jaw, which he would look upon as opposed to tuberculosis. Dr. Weil replied that he had frequently met with such cicatricial cords in old tuberculous ulcerations of the palate. The difference in the condition of the upper and lower jaw can be referred back to the unusual bad condition of the upper teeth, besides there are on record numerous cases of quite extensive tuberculosis of the palate and of the nose, in which not the slightest involvement of the larynx and lungs could de demonstrated.

ERYSIPELAS IN THE NEW-BORN ACCOMPANIED BY EXTENSIVE GANGRENE, ENDING IN RECOVERY.

J. Friedjung (*Archiv. f. Kinderheilk, 1898, xxv., 1-2*) relates the following case:

On September 7th a woman brought her baby, 9 days old, to the Policlinik in Vienna, and gave the following history: The remains of the navel had fallen off on the sixth day after birth, when the midwife covered the wound with a leaden button and bandaged it. On the following day the mother noticed a redness surrounding the navel; this gradually extended more and more in a downward direction. Present condition: A 9 days old, well-developed boy baby; weight 3,150 grams; slight jaundice: high fever; a typical erysipelas is present on the mons veneris and the genital organs. The lower surface of the penis presents slight erosions. The penis and scrotum are greatly swollen. The navel and its vessels are seemingly healthy. The child nurses at the breast. Treatment: Regulating nutrition; a bandage of iodoform gauze wet with liquor Burowi was applied after disinfection of the unhealthy parts.

September 8th.—Scrotum of the size of a small apple, of a livid color. The erysipelas is extending to the thighs.

September 9th.—The scrotum still more enlarged and discolored; bulla of the size of two kreutzer and filled with a bloody-tinted serous fluid are present. The stools are dyspeptic, colic. Fever continuous—a dry iodoform bandage was applied.

September 10th.—The gangrene progressing more deeply; the fever somewhat less; the child is more quiet.

September 12th.—Gangrene has gone still deeper. The erysipelas progresses in a downward direction. The stools are improved; the erysipelas portion was bandaged with moist dressings.

September 14th.—Gangrene of the scrotum, embracing nearly the whole scrotal integument, is showing demarcation. The erysipelas in the meanwhile has extended to the feet. On the left dorsum of the foot is situated a large ominous bleb; as above, the skin is discolored. The fever has lately again increased. Digestion good. A dry iodoform bandage was applied to the foot.

September 15th.—The gangrene of the foot has a tendency to progress deeper. On the scrotum it shows demarcation on all sides.

September 17th.—The gangrene also begins to show demarcation on the anterior surface of the foot; nearly the whole skin of the latter has been attacked. Abscess on inner left malleolus. Erysepelas involves both arms and the hands. Incision.

September 19th.—The mortified portion is gradually being raised at the border. Abscess formation on the left leg. The erysipelatous process has become paler on the upper extremities. Fever slight; stools less dyspeptic. Incision.

September 22d.—The gangrenous portions have been totally thrown off. On both places is seen a large granulating surface, covered with mortified portions of tissue. Both testicles are exposed in the scrotum. On the foot the fascia is exposed. Bandage was applied containing a 1 per cent. ointment of nitrate of silver. Stools normal; fever none.

October 14th.—The granulating surfaces have rapidly cleared up. Cicatrization is rapidly progressing, Bodily weight 4,350 gr.

October 26th.—Cure complete. The child is 8 weeks old, weighs 4,800 gr.

The study of this history impresses us with the fact that during the whole course of the disease there was an absence of grave symptoms on the part of the internal organs; the icterus in the beginning of the disease must be looked upon as an icterus neonatorum, the dyspeptic symptoms invariably disappeared rapidly afer high irrigations and curtailment of food. The organism therefore withstood successfully the invasion of the general system, and this was a reason in the beginning for a favorable prognosis. On the other hand, the prognosis was somewhat obscured by the age of the child, it being only a few days old, by the complication with gangrene and with suppuration.

The extension of the gangrene both over the surface and involving the deeper tissues, was certainly very dangerous, the necrosed scrotal skin measuring about 8 cm. in the square. All this was, however, counterbalanced by the happy fact that the baby was able to nurse at the breast.

The treatment was symptomatic, especial attention being paid to cleanliness. Great stress was laid on the regular nursing of the child, and thus the child did not only recover, but was dismissed with a bodily weight which passed the average. Experiences like the foregoing permit the induction that children at the breast are able to resist grave infectious diseases much more successfully than bottle-fed infants.

The question will yet arise in the future whether a plastic operation should not be done on the scrotum, especially also whether or not the development of the testicles will be interfered with by the cicatricial diminution of the scrotum.

A CASE OF HYDRENCEPHALOCELE.

Carstangen (*Wien. klin. Wochenschr., 1898, xi., 676*) presented a patient to the Wissenschaftl. arzte. Gesellschaft in Innsbruck (21, v., 1898), a 3-day-old child weighing 2,600 gr. The mother of the child is a girl 17 years of age; labor, it is said. was easy. The region of the occiput is surmounted by a tumor the size of the fist, which has a tense look and is distinctly fluctuating; the skin covering it is greatly thinned, of a bluish-red tint, in some localities changed by cicatrices, in others excoriated. The tumor is connected with the skull by a broad pedicle; it is not compressible, nor pulsating; a long bony wall can only be felt in certain places. The skull itself is unusually flat, the convexity of the forehead is altogether absent. The large fontanelle is just perceptible, the sagittal suture is plainly to be felt. The nervous disturbances of the child are also interesting. The right facialis is markedly paretic, the palpebral fissure of the other side can only be partially closed. Occasionally strabismus and nystagmus are observed. The nursing reflexes are not as prompt as in the normal baby. At times, especially when the child is picked up, strong, coarse tremor movements of the upper extremities make their appearance, frequently accompanied by jactitation of the bulbi, similar to nystagmus. Patellar tendon reflex is increased, there is clonus dorsalis; the reflex of the plantar surfaces of the feet is vivid. The skin is not very susceptible, no reaction following pinching and pricking with a needle. The child does not cry like a normal baby, but occasionally emits now and then a low cry. Other deformities are not present.

DEMENTIA PARALYTICA IN A ELEVEN-YEAR-OLD BOY.

NONNE (*Münch Med. Wochenschr., 1898, xlv., 944*) presented a rar case to the Aerztl. Verein in Hamburg (12, vi., 1898).

The mother of the boy had acquired syphilis before her marriage' aborted once, bore a 7-months child, which was born with an eruption, and died when 4 months old; the third pregnancy ended with the premature birth of the present patient. The child was born at the eighth month of pregnancy, and is suffering with a chronic nephritis, accompanied by acute exacerbations, periodically hemorrhagic.

The boy's present affection was first noticed four months ago by a mental hebetude which was first recognized in school, a rapid tiring of the body, which soon ended in dementia. At the present time the patient presents immobility of the pupil to reflexes, facial paralysis, tremor of the upper extremities, disturbance of the articulation in speech, tremor of the tongue, and with this a dementia of high degree.

The infantile paralysis, in the etiology of which syphilis plays an admitted rôle, is shown in the picture of a dementia rapidly running its course; is marked by the appearance of frequently recurring paralytic attacks, and the absence of remissions. The anatomical finding is the same as in the adult.

PEDIATRICS

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ORIGINAL ARTICLES

DRY ANTITOXINE—A CLINICAL STUDY OF ITS VALUE IN DIPHTHERIA.*

By LOUIS FISCHER, M.D.,
New York City.

Description.—It is a golden-yellow crystalline substance, quite readily soluble in sterilized water, and containing no foreign antiseptic. Liquid antitoxine is preserved with carbolic acid, and also trikresol; other preparations, like camphor, have been added as a preserving agent. This new solid diphtheria remedy is tested for its activity and also for the presence of germs by the government.

Directions for Use.—The remedy must be dissolved immediately before use by adding from 1 to 4 ccm. cold sterilized water by means of a sterilized pipette into a bottle of antitoxine. The solid serum dissolves slowly; the greatest caution must be used not to contaminate the solid serum, as it contains no antiseptic, nor should any be added to the water used for dissolving the serum.

Bottles containing 1,000 units constituted a healing dose, and in a very malignant case it was necessary to repeat this dose in twenty-four hours. The antitoxine, after the water is added and thoroughly dissolved, is then injected into the intrascapular region, or in the buttocks, or the thighs, or in the loose connective tissue of the abdomen or even the chest. The same aseptic precautions that would be used in giving an ordinary hypodermic injection must be used while injecting this dissolved crystalline antitoxine. Between 2 and 3 ccm. of sterile water was sufficient to dissolve the contents of a bottle containing 1,000 antitoxine units.

It is advisable to keep the bottles containing the serum in a cool, dark place.

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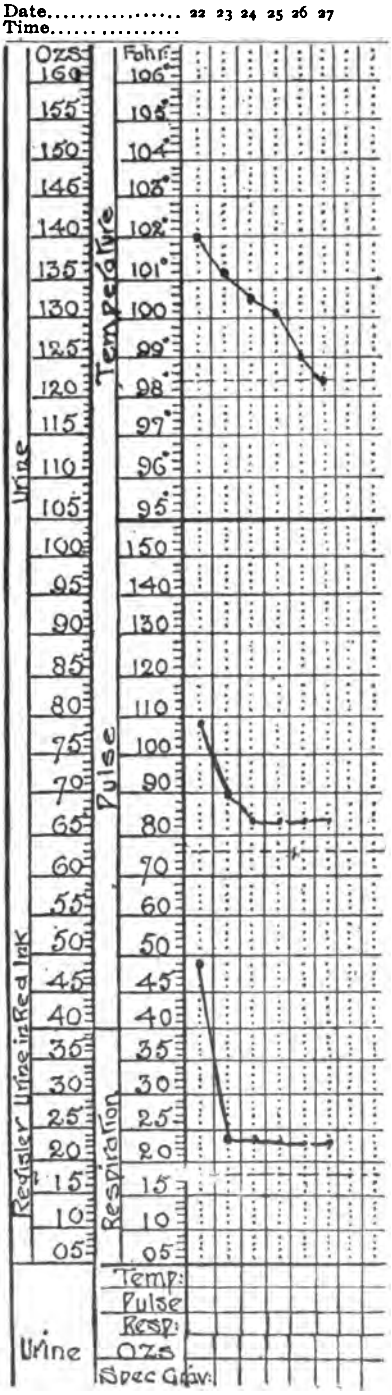
* Presented to the Section on Diseases of Children at the meeting of the American Medical Association, June 6 and 7, 1899.



The following cases will serve to illustrate the value of the dry antitoxine.

CASE I.

Lizzie G., born U. S.

Family History. — Negative; Sister had diphtheria last year.

Habits and Surroundings.— Attends public school; tenement, two rooms; two adults, four children. Cleanliness leaves a great deal to be desired. Ventilation bad.

Previous History.—No contagious diseases. Inclined to tonsillar inflammations. Adenoids.

Present History.—The source of infection is probably to be sought in school or Sunday School. Lymphatic diathesis. The disease began on April 21st, when the child seemed feverish, restless, and complained of sore throat. A physician, who was consulted, declared that the child was suffering from "catarrh." The mother says she noticed some white spots in the child's throat. There was anorexia, cough and difficulty in swallowing. During the following night the cough assumed a croupy, brassy character, and in the morning the mother found that the child was breathing rapidly and noisily, and that the fever, sore throat, headache and nausea were intensified. There was considerable prostration. In the afternoon I saw the case, with my assistant, Dr. Saxe

The child presented a considerable degree of laryngeal stenosis, so that we warned the mother that intubation would be necessary.

Examination.—An anemic child, fairly well nourished, but with feeble musculature. The skin pale, hot and dry. There was no eruption. Herpes labialis. The bowels were regular; no vomiting. The temperature was 101°, the pulse 108; the respiration 48, shallow and noisy. The intercostal spaces, and the suprasternal notch, and sternocostal angle are depressed at each inspiration. There is a croupy cough. The tongue is coated and moist. There is a slight nasal discharge. The conjunctivæ are normal. There are enlarged glands on both sides of the neck, which are hard, mobile, and not painful to the touch. The tonsils, arch of the palate, and posterior wall of the pharanyx show the presence of yellowish-gray spots of false membrane. They are exceedingly difficult to dislodge. The surrounding mucosa is diffusely inflamed. A culture on serum agar was planted with some of the exudation, and within 24 hours sufficient growth appeared on the surface. The bacteriologist reported the presence of true Klebs-Loeffler bacilli. (Report N. Y. Health Board, No. 2813).

There was no pain in the chest, there was distinct bronchial fremitus on palpation. Auscultation was extremely difficult, on account of the laryngeal stenosis, and revealed sibilant and sonorous breathing, subcrepitant râles and pulmonary vocal resonance. Percussion sounds normal. The heart action regular, no murmur. The abdomen negative. The feces are of normal color and consistency. The urine sp.gr. 1022, no albumen, no casts, quantity average, reaction acid, color normal.

Diagnosis.—Laryngeal diphtheria. Tonsillar and pharyngeal diphtheria.

Prognosis.—Grave, on account of the amount of laryngeal stenosis.

Treatment.—On the same day, an hour after the first visit, Dr. Saxe injected 1,500 units of the dry antitoxine of Behring into the right hypochondriac region. Temperature at injection 102.4°; pulse 120; respiration 48. Calomel tablets 0.015 t.i.d. Inunctions of 25 per cent. mercurial ointment to the neck.

The same general management and diet as in the preceding case. At 8.30 P.M. on the same day I found the child in extreme asphyxia and immediately intubated. The relief was instantaneous.

April 23rd. On the following morning the child's respiration was perfectly normal, being at the rate of 24 per minute. The temperature was 101.2° F., the pulse 90, and the general condition considerably improved. There was still considerable cough and stringy mucus was expectorated. The child was given a mixture containing two grains of ammonium carbonate, one drop of the tincture of strophantus, 20 minims of syrup of wild cherry in a teaspoonful of water. The bowels were regular. The other medication was continued in the same way. No more antitoxine was given.

April 24th. The child's breathing is normal, and there is no sound of an obstruction, as there often is in intubated cases. The membranes disappeared from pharynx, tonsils, and palate. The examination of the heart and chest is negative. The herpes labialis and the swollen cervical glands are beginning to disappear. The temperature is [illegible], the pulse 84, and the respiration 24. The child sleeps well at night and has more appetite.

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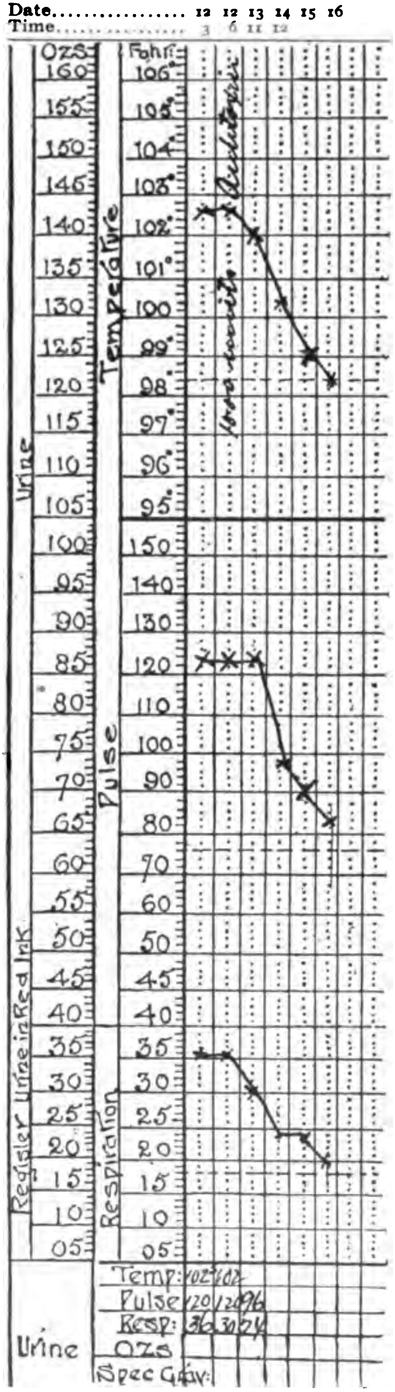
April 25th. The general condition is very good. The bacilli have disappeared from the throat, as attested by bacteriological examination. The temperature is 100.2, the respiration and pulse the same as on the preceding day.

April 26th. The child's cough is less frequent and the breathing is normal. The appetite is very good, the tongue clean, and the cervical glands almost normal. The same medication is continued. The temperature is 99, the pulse 84, and the respiration 24.

April 27th. The child was extubated (on the fifth day). The tube was coated with lime salts, but its lumen was free. There was no dyspnea, and the child continued to breathe easily after the extubation. The temperature was 98.6; the general condition very good.

In this case no sequelæ were observed, though on the day after the intubation the child looked as if it were going to have broncho-pneumonia.



CASE II.

Diphtheria.

Rudolph D.; born in United States; male; 7 years old.

Family History.—Mother has suffered from several attacks of "diphtheria"; father died of heart failure; other relatives negative.

Mode of Life. — Tenement; two rooms; two persons; third floor; cleanliness exceptional; ventilation fair; goes to day school and to a kindergarten in the afternoon; scarlatina in the same home; used to board with that family until scarlatina broke out.

Previous History.—No infectious diseases; bronchitis (broncho-pneumonia) four years ago.

Present History.—The probable exciting cause is exposure in school; contributing causes: anemia, large tonsils, lymphatic diathesis. The disease began gradually on the 11th of April, 1899, with fever, loss of appetite, malaise, nausea, vomiting; pains in the epigastrium of a colicky nature (?); tickling in the throat; salivation; difficulty on swallowing; drowsiness and peevishness.

Dr. Saxe saw the patient on the 12th; the chief complaint was feverishness and pain in the epigastrium.

Examination.—April 12th. An anemic child, small for its age, delicate skeleton, pale skin, thin musculature. The *skin* is slightly moist and hot; there is no trace of an eruption. The temperature mouth is 102.4 F. at 3 P.M., the pulse is irregular, full. The respiration 36, but there is no dyspnea and no laryngeal stenosis, no hoarseness. The *tongue* is coated and dry; there is no discharge from the nose; the conjunctiva are injected, the head feels hot; there are a pair of *enlarged glands* on the right side of the neck at about the middle of the anterior border of the sterno-mastoid muscle. They are hard, mobile, tender, and distinct from each other. The *breath* is foul-smelling. *Tonsils* are slightly enlarged and covered with patches of false membrane, three or four on each side. The patches are of a dirty-gray color, with thick, darker, greenish edges. They are hard to dislodge, and the mucous membrane beneath them bleeds easily. There is not much peritonsillar inflammation, though some redness of the arch and pharynx is present.

A serumagar culture tube was innoculated with some of the exudation from the left tonsil, the swab removing a bit of membrane and producing bleeding. The culture was grown for twenty-four hours at 37.5 C. The resulting growth proved to contain Klebs-Loeffler bacilli (Report of New York Health Department, No. 2560). There is no cough, no pain in the chest. The examination of lungs and heart is negative. The abdomen is slightly distended, there is no exaggerated tympany over the stomach and the descending colon. The feces are dark and hard, there is constipation. The urine is of a sp. gr. of 1025, is clear, dark-brown, no sediment, scant in quantity, acid in reaction, and there is a trace of albumen.

Diagnosis.—Diphtheria.

Prognosis.—A medium case with fair chances, but look out for sequelæ.

Treatment.—(a) Bed, isolation; renew clothing as necessary and boil after removing. Temperature of room. Ventilation. Care of skin. Prevention of chills and draughts. Cold compress to the throat.

(b) *Diet.*—Cold milk, mineral waters, lemonade, cracked ice, ice cream, scraped beef.

(c) Injection of 1000 units of antitoxine (dry), obtained from Dr. Fischer at 6 P.M. on April 12th, into the skin of the right hypochondriac region. Temperature at injection 101.6 F. Pulse 120, respiration 36.

(d) Potassii Chloratis 2,0; Tr. Ferri chloridi 8,0; Glycerini

10,5; Aqua ad. 60,0. A teaspoonful every three hours in water. Gargle with normal salt solution every hour. Calomel tablets 0,015 t.i.d.

April 13th (12 M.). The temperature is 102 F., the respiration 30 and the pulse 120. The child is less pale. There is still pain in the throat, anorexia and difficulty in swallowing. The pain in the epigastrium is gone. There has been no more vomiting, the bowels are regular, the urine still scanty, sp. gr. 1023, and a trace of albumen. The child is less drowsy and is quiet. The tongue is cleaner. The cervical glands are slightly larger than on the previous day. There is no change in the appearance of the membrane. The lungs and heart are normal.

April 14th (12 M.). The temperature is 100.2 F. The pulse 96 and the respirations 24. The quantity of urine is greater, the urine not so dark, and the sp. gr. is 1024. There is still a trace of albumen perceptible with the simple heat and nitric acid test. The appetite is good, the skin feels cooler, the salivation is gone, and the child breathes through the nose at night. The tonsils are smaller, and the membrane is beginning to disappear on both sides, especially the left. The child is bright and wants to get up. The bowels are regular, the breath less odorous.

April 15th. The temperature is 99, the pulse 90, the respiration is 24. The urine is clear, light yellow, sp. gr. 1020, contains no albumen.

April 16th. The temperature is 98.6 F. The pulse 84, the respiration 20. General condition good.

April 22d. There are no more bacilli in the throat; the child was kept confined to its room for three weeks. Strychnine 1-60 gr. t. i. d. was continued during all this time.

May 10th. The child's heart is normal; there are no complications.

CASE III.

Katie K., born in the United States, aged 7 years. Father dead; cause of disease unknown. Mother healthy; washerwoman; three small children in family, all healthy.

Mode of Life.—Tenement; three rooms; moderate cleanliness; ventilation fair; goes to school.

Previous History.—Had measles and bronchitis.

Present History.—Probably she became infected in school, as there was no other case of diphtheria in the house. Patient first complained of loss of appetite, fatigue, sore throat, pain on swallowing, and headache. Patient was first seen on March 25, 1899, at 2.30 P.M. The chief complaint was the sore throat; no fever had been noticed. On examination we found a thin, pale child, fairly well developed and nourished; skin normal. and no eruptions of any kind on the body. Temperature per rectum was 99.4°; pulse 100; respiration 28. No dyspnea or hoarseness; tongue slightly coated and moist; no discharge from the nose; glands of the neck are not enlarged; tonsils are both enlarged and covered with a thin, white membrane; pharynx, fauces, and uvula are slightly reddened.

On taking a culture direct from the membrane, none of it was dislodged, it being evidently firmly adherent to the mucous membrane. There was no cough or pain in the chest; lungs and heart were normal; abdomen showed dullness on percussion in the lower left quadrant; patient was constipated; examination of the urine was negative.

Diagnosis.—Diphtheria, based on local signs and on the report of the New York Health Department, which showed Klebs-Lœffler bacilli in the culture from the membrane.

Prognosis.—Good.

Treatment.—(*a*) Bed; isolation; ventilation; diet to consist of milk, cold mineral waters, and beef juice. (*b*). Antitoxine, 1,000 units of dry antitoxine obtained from Dr. Fischer injected into intra-scapular region. *c*. Calomel gr. ss t.i.d. Gargle with normal salt solution.

March 26, 1899. Membrane is disappearing from tonsils, only a small patch remaining on each tonsil. Patient complains of a dull pain in back, felt especially when she is lying down. This was due to the injection; bowels had not moved, and castor oil was ordered; appetite still poor.

March 27, 1899. Membrane has disappeared entirely from right tonsil; still a small patch on the left tonsil. Patient had a good movement after the castor oil; appetite much improved. Temperature 98.8°.

March 28, 1899. Tonsils both clear; redness of pharynx, and fauces also gone; appetite has returned. Temperature, pulse, and respiration normal. Pain in the back is gone entirely. Report from Board of Health showed absence of Klebs-Lœffler bacilli. Heart and lungs are normal; no complications remain.

CASE IV.

I. S. C., female, born in the United States.

Family History.—Father and mother both living and healthy; two other children in the family, both younger. Boy had had diphtheria one year ago, also had his tonsils removed after he had recovered. All three children had hypertrophied tonsils, those of the boy having grown again after extirpation.

Mode of Life.—Tenement; three rooms; not very clean; ventilation not good; goes to school.

Previous History.—Negative.

Present History.—No source of infection could be ascertained. Two days before patient complained of sore throat, pain on swallowing, loss of appetite, headache, sleepiness, fatigue, and pain in the back; neck slightly swollen.

March 21, 1899. Patient was first seen this afternoon; she complained principally of a sore throat and headache; patient is well developed and nourished, but a trifle pale. She has the "adenoid" expression, although not so markedly shown as in her brother; no eruption on the body. Temperature 98.8° F.; pulse 92; respiration 24; heart's action regular. There is an enlargement of the glands of the neck, especially marked on the left side, although the right side is also affected. They are hard to touch, and skin covering them is normal and freely movable.

Lungs show subcrepitant râles over upper part on the left side and sonorous râles over entire right lung; patient has slight cough; tongue slightly coated and moist; slight discharge from nostrils; tonsils both very much hypertrophied, and crypts widely open. On the upper part of left tonsil there is a thin white membrane. Culture is taken and sent to Board of Health; report showed presence of Klebs-Lœffler bacilli.

Treatment.—(*a*). Bed; isolation; ventilation; diet—fluid food, especially milk and vichy, also lemonade. (*b*). Antitoxine: 100 units of dry antitoxine were injected into the intrascapular region. (*e*). Calomel gr. s̄ s̄t.i.d.; also mistura-glycyrrhiza co one ounce q 3 h. (*d*). Throat to be gargled with normal salt solution.

Diagnosis.—Diphtheria, bronchitis, adenitis (cervical).

Prognosis.—Fairly good.

March 22d. Membrane is disappearing from tonsil, cough is much better; a few mucus râles still heard over both lungs. Bowels have moved normally. Temperature, pulse, and respiration normal.

March 23d. Membrane has disappeared entirely from tonsil; glands in the neck have diminished in size; appetite much better; heart's action good; temperature normal; no cough; lunus normal, except for a mucus râle once in a while; no bad effects were noticed from the antitoxine, not even a rising temperature resulting. Report from Board of Health showed the culture to be free from Klebs-Lœffler bacilli. Mother was advised to have the tonsils of the three children removed as soon as all trace of diphtheria had disappeared. This wos accordingly done; three weeks after cultures of each of their throats were free from Klebs-Lœffler bacilli.

CASE V.

Mamie K., age 6 years; United States; race: white.

Family History.—Negative.

Habits and Mode of Life.—Lives in light, well ventilated rooms; cleanliness irreproachable; western exposure; house drainage and plumbing in good condition; attends kindergarten, which was probably source of infection; no infectious disease in the house.

Previous History.—Measles and chicken-pox some years ago; has been suffering from frequent colds, due to adenoid growths in the pharynx; during the past two years attacks of subacute articular rheumatism. Physician who treated her at the time,stated that her heart was affected.

Present History.—The child was perfectly well, except a slight cough, until May 16, 1899. On that day she woke up with nausea, anorexia, and feverishness; her skin was flushed the child felt weak and incapable of exertion. The bowels moved regularly; urine was rather scanty and of a dark color; there was no vomiting and no convulsions. I saw the child on the same day; temperature was 102° F. There was a thick, dirty, green membrane on the right tonsil and a grayish-yellow patch on the left one; there were smaller spots on the arches of the palate and on the posterior pharyngeal wall. A portion of the exudate was inoculated in the usual way on Lœffler's serum and grown for twenty-four hours. On bacteriological examination it proved to be an almost pure culture of the Klebs-Lœffler bacilli.

May 17th.—I sent my assistant, Dr. G. A. Saxe, to take charge of the case. He found the child in the following *status præsens:* a pale, anemic child, of a distinctly lymphatic type; fairly well nourished. The child is bright, and answers questions intelligently; it prefers to sit up in bed, propped up with pillows; it is somewhat irritable; the skeleton is delicate; the child is not large for its age. The skin is pale, and there is a slight amount of perspiration; the lips are pale; the conjunctiva deeply injected; there is no eruption, no hemorrhage, no edema. The temperature was 102.2° F. per rectum. The bowels were regular, two or three brownish, semi-solid stools daily; no mucus and no blood. The urine was clear, dark reddish-brown, and the amount was normal. The appetite is not good; the tongue is coated with a slight, brownish-white fur, especially in the center and at the base; there is no herpes labialis. Pulse is 120, tension slightly increased; rhythm regular, full; the lungs give normal resonance and there are no auscultatory signs except some subcrepitant râles and sibilant breathing on both sides behind. The heart is normal; there is tympany all over the abdomen, but no tenderness; the teeth are devoid of enamel, and a number have been broken off; the second set is beginning to develop, and a portion of the upper right incisor is showing through the gum. There are no lesions on the mucous membrane of the cheeks; the right tonsil is covered by a dirty, greenish-gray, pseudo-membranous mass, with thick edges, dense, adherent, surrounded by an inflammatory areola. The left tonsil presents a smaller spot of membrane, grayish-yellow in color, but of the same consistency as the right. The arches of the palate are both fringed by bands of the same character as the exudate on the left tonsil. There are two spots behind the right tonsil on the posterior lateral wall of the pharynx on the level with the middle of the uvula. The mucous membrane of the mouth and of the soft palate is congested and covered by stringy mucus secretion. The right side of the neck, corresponding to the tonsil which is most affected, presents a small, hard swelling, which, on palpation, proves to be two of the cervical glands in a state of tumefaction. The conjunctivæ are deeply injected up to the palpebrobulbar junction.

Diagnosis.—Diphtheria.

Prognosis.—Doubtful.

Treatment.—On May 17th the patient received an injection of 1,000 units of Behring's dry antitoxine under the prescribed technique. The injection was marked by considerable struggling on the part of the child, and Dr. Saxe was hampered by a lack of assistance. The puncture was sealed with iodoform collodium. The child was put on the same mixture of iron and chlorate of potassium, which was used in the other cases. In addition, gargles of normal salt solution were ordered every hour. The diet was restricted to milk and demulcents as in the other cases. The general management was the same. Calomel, gr. ¼, was given three times a day, and the eyes were washed with a saturated solution of boric acid. A cold compress was put around the neck.

May 18th. The child passed a comfortable night; there had been slight cough; the bowels moved four times, stool soft and of a dark color. The urine was passed in considerable quantities. The child is not as pale as on the preceding day. The swelling on the right side has not increased in size. The cough is not very troublesome; there is no change in the condition of the heart and lungs. The temperature was 100.2, pulse 114, respiration 18. The membranes are in the same condition as on the previous day. There are no lesions on the auricle, nor on the genitals, and the nose is not affected. The treatment was continued in the way already indicated. No more antitoxine was given.

May 19th. The patient looks less pale, the conjunctivæ are less red, the swelling on the right side is getting smaller; the membrane of the right tonsil has disappeared almost entirely; the rest of the membrane is the same. Appetite is returning. Temp. is 101.2 F., P. 96, R. 24. The tongue is clean, bowels are regular, child passes a fair amount of urine; there are no changes in the condition of the heart and lungs.

May 20th. The membranes on the left tonsil have disappeared, those on the arches are almost gone and there are no traces of any of the patches that were seen in the pharynx.

A culture taken from the throat on this day showed the presence of Klebs-Lœffler bacilli. The child is bright and wants to get up. The conjunctivæ are still somewhat congested; there is a small hard lump in the neck; appetite is fair, bowels regular, tongue perfectly clean. Temp. 100; Pulse 84; R. 18. Cough has almost entirely subsided; there are no more subcrepitant râles, and the heart is normal.

May 22d. Temp. is 99.6; pulse 90; resp. 20. Appetite is good; she sleeps very well all night; bowels regular. There is a sufficient amount of urine excreted, and the color is lighter. The conjunctiva is practically normal. The membranes have disappeared entirely. A culture still showed the presence of Klebs-Lœffler bacilli.

May 23d. The temp. is 99; pulse 84; resp. 24; tongue is clean; appetite good; the gland still persists as a small, hard lump. The gargles are discontinued; the calomel is stopped.

May 25th. Temp. is 99; resp. 24; pulse 90; general condition very good. Bowels regular; urine normal; there is no heart murmur, and the chest is normal. The elixir of iron, quinine and strychine is substituted for the iron mixture; dose half teaspoonful t. i. d. The child is allowed solid food.

May 27th. Pulse 84; resp. 14; temp. 99.2. The glands still enlarged; general condition excellent; conjunctiva and throat present normal appearance; mercurial 25 per cent. ordered for the cervical gland.

May 30th. Pulse 84; resp. 18; temp. 99; general condition good; appetite, bowels, tongue, urine, throat and conjunctiva normal. The gland is not smaller; the child is allowed to get up and sit in a chair for a few hours.

June 2d. Temp. is 100; pulse 84; resp. 18; general condition very good. The cervical glands are normal and cannot be felt. A culture taken on this day showed the throat is normal; appetite is good; tongue clean and the bowels regular; stools are black from the iron which the child is taking.

June 3d. The examination of the urine shows a specific gravity of 1022; color light yellow; transparency perfect; reaction acid; albumen, none; sugar, none; sediment, none.

My experience has been limited to five cases. Two of these were very malignant, one very severe and two mild. Case 1 was a very severe case of diphtheria; case 2 a very malignant case, which necessitated intubation; about six hours after first seen. A very important point, and one worth noting, is that there was no distinct reaction immediately following the injection, nor was there any later in the disease. In the child, R. D., the temperature remained stationary, did not rise or fall on the first day of the injection, but fell by lysis the following day and the succeeding days until the child recovered This was true in all other cases; the temperature went down slowly by a process of lysis from the first day of the injection until the final recovery. The pulse behaved similar to the temperature, the number of beats going down from 120 to 80 in one case after several days of treatment, and in case L. G. which necessitated intubation, the pulse went down from 108 to 80 in two days after the intubation. The respiration went down in 24 hours from 48 at the time of the intubation to 28 in one day. All five cases recovered without any sequels. A noticeable point was that not one of the children complained of pains in the joints following injection. In none of the cases injected was there an antitoxine rash following the injection of the dry antitoxine. It has frequently been claimed, and by some very good observers, that one of the main reasons for the appearance of an occasional exanthema following the injection of the liquid antitoxine was because the latter contained either trikresol or carbolic acid for the preservation of the same. Some chemists have stated that in some instances where toxic symptoms have been observed, that the latter were produced by the small quantity of carbolic acid present in the serum. If this is true, then one of the most objectionable features added to the antitoxine have been removed. Antitoxine is no longer an experiment, and therefore, without wishing to overestimate this new product, I feel warranted in advocating its use in every form of diphtheria, and more especially in very malignant forms. No more than 2,000 units, or the contents of two bottles, each containing 1,000 units, was necessary to effect a cure, although a substantial improvement in the disappearance of the membrane in the pharynx and tonsils, in the swelling of the cervical glands, in the lowering of the temperature, and a corresponding decrease in the pulse rate, and a general brightening up of the patient's condition was noted the following day in each one of my patient's after the use of 1,000 units of antitoxine. It is well to again emphasize what I said in the beginning of this paper, of the absolute necessity of using the greatest amount of care to keep the hands and the skin of the patient absolutely clean. This applies, however, most especially to the pipette and to the bottle of antitoxine and the water used. If the slightest foreign matter is introduced, and our injection is not given absolutely aseptic, then and then only can some infection take place and interfere with the proper effectiveness of the healing remedy.

In conclusion, I desire to express my sincerest obligations to my two faithful assistants, Dr. Leopold F. Haas and Dr. George A. Saxe, for their careful assistance in the treatment of these five cases and for the aid given me with the clinical memoranda.

187 Second Avenue.

HIP DISEASE: CAUSE, DIAGNOSIS, AND TREATMENT.

By Ap Morgan Vance, M.D.,
Louisville, Ky.

HIP DISEASE is a chronic osteitis, beginning in one of the bones making up the hip joint, or is the result of an extension to the bone of an inflammatory process which has begun in the soft structures of the joint. The latter is very rare in my opinion.

This is essentially a disease of early childhood. The inflammation of the bone is nearly always tuberculous, though in a receptive diathesis it may follow any of the exanthemata; I mean a lack of resistance to the ever present bacillus tuberculosis. A child may give a perfectly clear history as to possible hereditary tendency to tuberculosis, but give a history of whooping cough, measles, or scarlet fever, and I believe the summer diarrheas have the same effect, which has rendered it less resistant to the tuberculous associations to which we are all exposed. A slight fall, which is often unnoticed, will be the locating cause, and this child will have a tuberculous osteitis of the spine, knee, hip or ankle, as the case may be.

The conclusion, then, is that all cases of true hip disease, which are not syphilitic, are tuberculous, the disease being nearly always located by a traumatism. I am speaking only of true hip disease, i.e., chronic articular osteitis of the hip joint.

There is little more to be said in a short paper as to cause. The early diagnosis is the important element, because it gives us a chance to establish a treatment when most good will follow.

The difficulties met, even by the most experienced, in this kind of surgery are well known, but if we will study the matter carefully and endeavor to educate the people to the point of seeking surgical advice sooner, much good will result.

When investigating one of these cases, the first question to ask is the age of the child, the vast majority of cases of true hip disease begin between the ages of four and eight years. Obtain next the family history, it being a fixed clinical fact that a perfectly sound child rarely has true hip disease. The diathesis which renders it possible for some locating trauma to set up an ostitis of one of the large joints in childhood, is usually hereditary, but may be acquired as the sequelæ of the exanthemata or any exhausting disease. Whether this is simply from the fact that the intercurrent disease destroys resistance, and allows the latent hereditary causes to gain headway or not, is a question for discussion.

The last thing to obtain before making a personal examination of the patient is the history of any locating injury which may have occurred, and the length of time since the first symptom was observed. This should be credited only after a prolonged and careful interrogation. Often a history of limping will be obtained, antedating by many months the first statement received. This is the most important element in getting at a proper diagnosis; for just in proportion to the chronicity of the case is the chance of its being osteitis.

In the early stages of hip disease, pain is not a factor, unless it be one of the cases where synovitis went before, and the bone becomes involved as a secondary affair. Not common in my experience, though entirely possible. The personal examination should be conducted very carefully, for if the child gets frightened, or from any other reason is not perfectly docile and submissive, it is difficult to get any examination at all.

Try by all the arts at your command to gain the little one's confidence, and after all the clothing is removed, have the patient walk to and fro, and note the limp, if any. This, in the beginning, is not the limp of pain, but simply an unconscious yielding of the body to the affected side, noticed at times only in the deviation of the trunk toward this side farther than is observed on the other. Watch the child as he stands, while his attention is on something else. As a rule the affected limb will be placed in a slight flexion at the knee and hip, the weight being on its fellow. There is no regularity in the appearance as to general condition; the most robust and healthy looking children may have hip disease.

After you have satisfied yourself as to the above points, lay the child on its back on a firm, flat table, measure the thighs and legs, always at corresponding points, to see if any atrophy has taken place; then measure the length. This must be done very carefully, from the notch below the anterior superior spinous process of the ilium to the internal malleolus; *never* from umbilicus. There will never, of course, be any shortening, but possibly a little lengthening of the affected limb in the incipient stage. Apparent lengthening is often found of the affected limb. Now test the joint functions, first manipulating the good limb, to be more sure of the patient's submission; then very gently move the affected limb toward flexion, the pelvis being fixed with the left hand; then toward hyperextension, with the child in the prone position, comparing the extent of motion allowed with the other side; ad- and abduction, with rotation, should in like manner be tested and compared. The knee and foot should never be concussed. This practice is barbaric, and intertrochanteric pressure should never be made for the sake of the possibly diseased joint. The old sign of the obliteration of the gluteal fold is no longer relied on, as anything causing the thigh to be flexed will elicit this change. Now the trouble about making a diagnosis lies in the fact that very often many of these physical signs may be present in other lesions. Rheumatism may give retarded motion and cause a limp. Atrophy in a less degree may come from this cause. There are many things with which osteitis of the hip may be confounded. But when talking to surgeons it is unnecessary to discuss the differential diagnosis from psoas abscess, perinephritis, appendicitis, genital irritation, sciatica, ovarian irritation, etc. These are almost immediately excluded, and really the *simon pure* lesions of this joint are only to be considered. This would be on a par with discussing the diagnosis of hip disease in the second or third stages, when any old woman would know what the matter was. Hip disease should be under active treatment long before any deformity, or, as a rule, any pain is present. The osteitic cry is present rarely in the incipiency, but is more constant later in the disease. It is difficult to put into words the process by which one arrives at a conclusion with given data. I take it the diagnosis is always made by exclusion, and it is hard to describe the symptoms and combination of symptoms which enables one to say positively that a case is one of articular osteitis, or something else, but this can be done in almost every instance, after handling a number of the different diseases affecting this articulation. It requires constant contact with a large number of patients for some time to be able to prognosticate the progress of a certain case, where, for instance, there are only one or two of the group of symptoms present, for example: A hardly perceptible limp in a seemingly perfect child, with no history of injury or any atrophy yet present, no pain, sleeps well, and but for this slight limp, and usually a moderate complaint of being tired during play, or after walking any distance, the parent would not think of consulting you.

Upon close inspection you find this child when standing, will favor the limb in which the limp is noticed, and will be more or less awkward in putting on the shoe of this side; when possibly no motion except complete flexion will be limited, or perhaps only rotation. Maybe it will be ad- or abduction that is very slightly retarded. You may get the history that this slight limp has been present anywhere from three years to only three months. We rarely see a hip case under three months from the time the parents have noticed some modification in gait, or their attention has been directed in some way to the limb. I have known cases to go for more than three years, with slight symptoms, and no treatment until an acute exacerbation takes place. So the slowness of the progress, the hereditary right to a diathesis, either tuberculous or specific, or an acquired condition that renders resistance less, the limp, limited joint movement and atrophy, with or without the history of injury, will give us the right to diagnose hip disease. The hip should have the benefit of any doubt, and treatment be established, as it is better to treat one out of a number who does not need it, than to wait until anybody could say what the lesion was. A blister will often clear up a diagnosis, and never go amiss, and will do good whatever the disease may be —periarthritic, rheumatic, synovitic, or osteitic.

The treatment of hip disease, in a "nutshell," is to put the limb in the best position for future use, and keep it there in as absolute mechanical rest as possible, at the same time see that the child's general condition is brought to and held at par. The ideal way to do this is to put the patient to bed, and use extension by means of weight and pulley, the weight being just enough to control the limb. This is to be continued a sufficient time for a cure to take place, the average time being, I should estimate, about two years. This plan is very difficult of accomplishment, outside of a regularly established Institution. Therefore we are left to the use of one or the other of the various forms of apparatus, the object of which is the maintenance of the affected limb in the best position, at the same time allow some kind of locomotion. These appliances are of two kinds, viz.: Those which aim at simply producing rest of the diseased joint, and those which claim that extension is necessary. The long extension splints of Sayre and Taylor represent the latter, the splint of Thomas and that of Lorenz the former. You are, of course, all familiar with these, except probably that of Lorenz, which I will mention later.

The difficulties met with in the use of either the Thomas, Sayre or Taylor splints in private practice is that they are rarely used efficiently when the application and daily attention is left to the family. If so situated that the child can be under the daily observation of the surgeon, they do excellently well, and ideal results are obtained.

The fixation splints, of which the Thomas is a fair representative, with which crutches are needed for locomotion, also have objections, where the splint is left to the family for adjustment, and the child for control. Just in proportion to the improvement is the tendency to relax the discipline, and misuse the diseased joint.

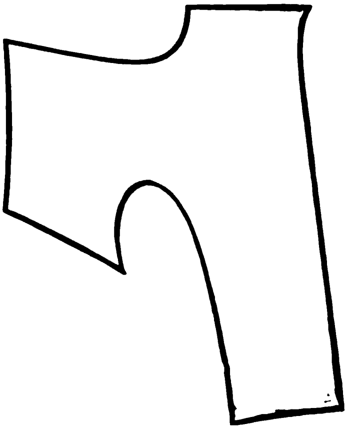
For the past eighteen years, or more, I have been using a short fixation splint in the treatment of hip disease, made of the fine saddle skirt leather, molded over the patient and made removable by lacing, crutches with high shoe being necessary for locomotion. The advantages claimed for this splint were its lightness, cleanliness, durability, and the fact of its easy removal. Besides, it could be removed without the aid of the instrument-maker, and could be worn effectively without the constant care of the surgeon. Therefore it served an excellent purpose in thsoe cases which came from a distance for treatment. The great disadvantage in the use of this very simple apparatus was found to be in the tendency on the part of the little patients to throw aside the crutches in the excitement of play, and walk on the diseased limb, notwithstanding the hampering influence of the high shoe on the affected side.

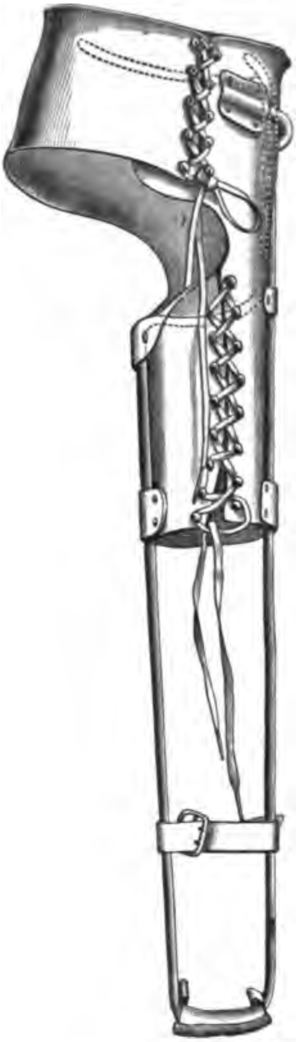
My friend, Dr. J. B. Bullitt, suggested to me the trial of the splint, used by Lorenz, of Vienna, which is a plaster of

Paris splint, reaching from the umbilicus to just above the ankle, combined with a stirrup of strap-iron under the foot, a high shoe on the good foot, the weight of the body resting on the ischium where the splint was furnished with a good pad. The idea which I had entertained for a long time of making my splint a walking apparatus was stimulated by a trial of the plaster of Paris splint of Lorenz, and I made the effort in November of 1895. Instead of the strap-iron, as used by Lorenz for the stirrup, I used a small solid brass rod, a material I had employed for a long time for knee-splints and paralytic apparatus. The very satisfactory use of the apparatus resulting from this first experiment, along with a number of other cases to which I have since applied it, influences me to give it to my professional brethren, with a short description of the method of its construction.

The original leather fixation splint referred to is made as follows: If there is deformity present, or an acute exacerbation in the joint, a weight and pulley are applied, and the child kept in bed for a few days, or weeks, as may be required; then the piece of leather is cut from a side of the best saddle skirting, after a pattern of paper which has previously been fitted to the patient. When this is molded, which is made very easy by immersing the leather in hot water until well wetted through, the temperature of the water regulating the stiffness of the splint when dry, a few degrees below boiling making it about right, an ordinary roller, or better an elastic bandage, is used to mold it to the patient—it extends from the umbilicus to the knee, the leather being so cut and placed as to bring the lacing of the thigh and pelvic portions in front. Two nicely trimmed tongues of the same leather are cut from the flank part, and riveted on with a tubular riveting machine, large shoe-hooks having first been placed along the outer edge of the part to be laced. A special tool is required for this, or the lacing may be done through simple holes made with an ordinary belt punch It is best to put the hair on the smooth side of the leather next the skin; then, ordinarily, nothing need be worn between the splint and the body. While this leather portion is allowed to set, not to dry, an outline drawing is made of the splint in position and the leg below, care being taken to locate on the paper the upper edge of the splint, the ischium, lower edge of the splint, bottom of heel, and a point

2½ inches below the heel. This drawing will be needed as a working pattern to be used in properly bending the brass rod, which will make up the balance of the apparatus. A solid brass rod, from one-quarter to three-eights of an inch in diameter, the length necessary being determined by measurements of the special pattern, is bent so as to be applied to the splint of leather in such a way as to extend from the front of the pelvic part of the splint down the outer side of the limb under





the foot and back to the ischium, around to the outer side of the splint, to meet again about the trochanteric region, up outside of the pelvic part, and back to the middle of the pelvic portion behind. This brass frame is then fastened to the leather by leather battens riveted through and through with tubular rivets, a smooth pad of leather being fitted over the rod and leather so as to form a firm rest for the seat-bone. A leather band below to fix the leg, and a leather sole, with arrangement for attaching extension, if needed, complete the apparatus, the whole being covered with a thick coating of shellac, if the child is in the habit of wetting the bed.

The great durability and firmness of this splint, along with the fact that it is easy of removal, and that it cannot be improperly applied, coupled with the fact that it can be made by the surgeon himself, and fills all the mechanical indications in the treatment of this most troublesome disease, make it, in my humble opinion, one of the best mechanical contrivances yet proposed. The comfort with which the little patients are immediately able to walk about, and the simplicity of its construction, with its cheapness, will recommend it for trial. The discussion of the operative treatment of hip disease would make this paper too long. Excision is rarely, in my opinion, ever justifiable, and I believe the concensus of opinion amongst those of the largest experiences is that the best results follow conservative treatment. Cold abscesses should be aspirated. Just in proportion to the extent of active surgical interference in this complication is the chance of disseminating the tuberculous process.

RUMINATION IN A BOY OF NINE YEARS.*

By LUTHER C. PETER, M.D.,

Instructor in Neurology, Medico-Chirurgical College; Chief of Neurological Clinic Medico-Chirurgical Hospital; Neurologist to Outpatient Department, St. Christopher's Hospital for Children, Philadelphia, Pa.

THE case which I bring before you is the subject of that interesting and rare phenomenon or disease, if I may so designate it, rumination or mericismus.

He is a bright boy, 9 years of age, of a quick nervous temperament, the oldest of six children, all of whom are nervous, but more robust than our patient. The father is intemperate, and the mother is subject to attacks of migraine, and seems to have bequeathed to her children an unstable, excitable disposition. Two years ago the parents noticed that the child, after leaving the table, made some slight effort, as in vomiting, and continued to chew and swallow. The habit was also observed by his playfellows, and the boy was jeered by his companions and corrected by his parents, but to no avail—he persisted in the practice. His own account is to the effect that he accidentally discovered that he could bring up his food after eating, and since it tasted just as when he swallowed it the first time, he rechewed and swallowed it. Later, however, the food came up apparently without effort on his part, and in fact when he did not desire it. For some minutes after eating, the food regurgitated is sweet, and he can recognize the various articles of diet, but after a time it becomes sour, and he is compelled to reject it. Although constantly corrected by his parents, he persisted in the practice, partly because he could not stop it without much effort and partly because he liked the habit. It is his usual custom to reswallow the food, but rejects it when sour, unless he is in school or some place where this is not possible. His mother says he has grown thin, and is so nervous of late that he cannot be corrected for misconduct. His appetite is poor, his diet consisting of little else than meat of which he is very fond.

The appearance of the food varies much with the amount of time that intervenes between the ingestion and the regurgitation. Soon after eating, it consists of finely divided solid particles, not disagreeable in odor; an hour later it is semi-fluid and of a sour odor. There is nothing abnormal in its appearance, and the digestive process seems to progress naturally. Dr. Kane, of St. Christopher's Hospital, made a number of examinations of the vomited matter, and invariably found hydrochloric acid present one hour after the food was eaten. It is quite evident from these tests that the food passes directly into the stomach after being swallowed; and, furthermore, repeated examinations with the bougie, to which the patient submits readily, failed to reveal an obstruction or pouch, which is alleged in some cases to act as a receptacle for the food when first eaten.

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* Read before the Philadelphia Pediatric Society, June 13, 1899.

When he came to the hospital he could at times, with great difficulty, prevent the regurgitation of food, and could reproduce his breakfast at will when requested. Under a tonic, sedative, and suggestive line of treatment, the boy has practically overcome the habit, and now has it under control.

The condition is a rare one, even in adult life, and in children one may judge of its rarity by a total absence of any discussion of the subject in most of our modern text-books on diseases of children. Among children the phenomenon occurs most frequently in idiocy, and in these subjects is usually caused by boulimia. Dr. James Hendrie Lloyd, in discussing a paper read by Dr. David Riessman on this subject (Proceedings of the Philadelphia Neurological Society, 1895) cited a number of cases which occurred at Elwyn during his term of service, in some of whom the habit was most disgusting. It does, however, occur in children of normal mental development, in whom, however, as in adults, there is a history of some disturbing nervous element. Sommers reported a case, 5 years of age (*N. Y. Med. Record, 1897*), associated with hydrocephalus. Singer (*Deutsche Archiv. f. Klin. Med., 1893*) described two cases of 16 and 17 years of age, in whom the fields of vision were much contracted, and other nervous phenomena marked. Another case of 7 years, reported by Runge (*Boston M. & S. J., 1895*), was the third member of a family who had acquired the habit—his father and grandfather both having been victims of rumination. Holliday (*N. Y. Med. Record, 1897*) gives an interesting account of his own case. He had acquired the habit in early childhood and continued until he was 18, when he learned to smoke. Smoking after each meal took away the desire to regurgitate.

The vast majority of cases occur among men, physicians and students being the most frequent subjects. It usually is associated with a profoundly neurasthenic condition or idiocy, and is therefore classed as a neurosis. To this rule our patient is not an exception. He is rather young to be a victim of neurasthenia, but springs from a neurotic ancestry, and is distinctly a nervous child, as his every movement indicates. He also is a great lover of meats, a peculiarity which is shared by most of these patients. His generally poor physical condition is, no doubt, due to his pernicious habit. He was compelled of late by his parents to reject the food when it regurgitated, and, being a light eater, he probably has not received much nourishment.

The therapeutics employed, which were Blaud pill, bromide salts, 15 grains daily, and suggestion have accomplished much good. His general health is improving; he is still nervous, but his habit is broken. It is generally thought that the habit is within the control of the will, and the termination of a majority of the cases warrants this conclusion. Trephining has been advocated and practiced by some to effect cure. The cases benefited are probably not cured by the trephining, but by mental impression, and as Dr. Lloyd expresses it (Proceedings of Philadelphia Neurological Society, 1895): It does not seem to be necessary "to cut a hole into a man's skull in order to put a suggestion into his mind."

CONCLUSIONS.

1. Rumination is a neurosis, associated with a profound neurasthenic condition or idiocy.
2. It is not, as a rule, associated with a diverticulum or dilatation of the lower end of the esophagus, but is primarily a stomach neurosis.
3. It may at times be hereditary.
4. It occurs more frequently in males than in females.
5. It usually is within the control of the will.
6. The prognosis as to cure is good.

2136 Oxford Street.

A CASE OF GENERALIZED VACCINIA.*

By James Tyson, M.D.
Philadelphia.

AFTER two unsuccessful attempts at vaccination with the so-called ivory points, a little girl, aged six months, was vaccinated on the right leg with the Alexander liquid lymph on January 9th. On the 12th I examined the seat of vaccination, and it was evident that it was going to be successful. On the morning of the 14th her mother noticed several pustules on one of the arms, while there was also a punctiform rash on the back, which subsequently became partly pustular. The isolated pustules became umbilicated, and increased in number, until on January 16th there were about thirty perfectly developed umbilicated pustules on the left arm, and nearly as many on the right. There was also a smaller number on the legs. The pustules were large, several at least half an inch in diameter. The average diameter of the others was half as much. There was no serious constitutional disturbance, and only slight fever, the temperature never reaching 101 degrees. The most noticeable effect was that the child wanted to nurse often. As early as the 17th, some of the pustules began to dry, although most of them continued purulent and grew in size. They closely resembled the pustules of small-pox in the umbilicated stage. Very interesting was the fact that they did not appear in one crop, but continued to appear in successive crops of one or more up to February 1st. The later ones assumed various sizes, and one in the immediate vicinity of the original vaccination was fully an inch in diameter, and became eventually a large angry looking ulcer. The vaccination pustule also became a large, ugly granulating ulcer, raised one-eighth of an inch above the surface. There was remarkably little constitutional disturbance at any time, and the child on February 5th had no fever. On that date many of the original spots were still present in the state of half-dried pustules. They were very slow to disappear, and on February 24th there still remained on the right leg one large, angry looking pustule. The others, including the vaccination, were dried up.

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* Read before Philadelphia Pediatric Society.

EDITORIAL COMMENTS

The International Tuberculosis Congress

On account of the inroads which tuberculosis makes in those of low age, one would naturally expect that a representative assembly of physicians interested in the study of this plague, would pass in review such important subjects as tuberculous lymphadenitis, peritonitis, osteitis, meningitis, etc., etc., to the extent at least of fixing the present status of these affections, together with what we have a right to expect in the immediate future, from the standpoints of contributory causes, diagnosis, prognosis and treatment. If we do not find that the Congress has considered these subjects, we must not hastily conclude that it has fallen short in the discharge of its duties, because the chief object of this convention was the celebration of the "popular sanatorium" idea, which, if placed in force, would enable all persons of small incomes and limited means, overtaken by tuberbulosis, to be rationally treated in their own neighborhood, with all the benefits certain to accrue from rest, open air life, constant supervision in all the detail of diet and medication, and last, but not least, freedom from mental worry, as a result of the operation of auxiliary societies for the protection of the helpless families of tuberculous bread-winners. From a Congress, pledged in advance by circumstances to a crusade of such magnitude against the scourge of tuberculosis, we must not expect that fullness of detail which might be a part of a regular, stated meeting of a permanent society. But has the Congress ignored the subject of pediatrics ? By no means. In Section V, of the transactions, which was specially devoted to the consideration of sanatoria, we find an authority like Prof. Ewald insisting that the sanatorium for adults is, after all, but an episode in the warfare against tuberculosis, and that the fruition of the sanatorium idea would be found in prophylaxis—or, in other words, in the expansion of the idea of the children's sanatorium. In institutions of this sort operated at the seaside the victims of scrofula would be cured, and all those naturally predisposed to phthisis would be so fortified by care and instruction that they would be in position mentally and physically to resist to their utmost their natural and hereditary foe. From remarks made by Ewald, Salomon and Baginsky, it would appear that children's seaside sanatoria have proved their worth for a period dating back a score of years. The only other point brought out by the Congress which would especially interest the pediatrist, was the reaffirmation of a statement, by no means novel, that there is, as a rule, no congenital or prenatal tuberculosis; with a very few cases of apparent exception, all tuberculosis early in life is acquired.

Anthropometry in Children

It appears to be a law in medicine and in applied science in general that the more the literature of a new field of activity is sub-divided, the slower is the advance, and the smaller is the total of practical utility, and of general recognition of excellence on the part of the understanding public. The comparatively new field of physical mensuration and psycho-physical tests is already divided up among a number of zealous students, including anthropologists, physiologists, padegogues, criminologists, neurologists, alienists, etc., etc. It is certainly worthy of note that the pediatrists, as a class, have been somewhat backward in identifying themselves with a movement that ought to appeal to them closely. In a subject containing the great possibilities of anthropometry, co-operation is imperative to ensure success. A federal society should be formed, with annual meetings, transactions, and official organ. Prominent representatives of all scientific walks in which anthropometry is indispensable to progress, should identify themselves with this society. Especially should any physician become a member, who intends to devote his life to the study of pediatrics. The recently issued Government Report, by MacDonald, entitled "Experimental Study of Children," will give the medical man an insight into the possibilities of anthropometry, as applied to children. It is extremely desirable to secure measurements and tests of children in any way out of the common. If they are especially bright, or stupid, or of mixed ancestry, or vicious, or unduly docile, or if they offer peculiar mental, moral or physical traits or capabilities, and so through a score of deviations from the average, the careful registration of these peculiarities may ultimately bring about, among numerous other equally important desiderata, the development of a science which will replace, to some extent. the crude phrenologies, physiognomies and other aberrant strivings after certitude in character estimation. From this standpoint, who is so well qualified as the physician to first recognize unusual types of childhood? Cases of this sort reported to the parent society, would doubtless find an echo not only from other physicians, but from educators, penologists, artists, etc., etc. MacDonald's book is full of generalizations, and shows how pre-eminently anthropometry is calculated to find expression in laws, or axioms. To select a few at random: "Bright boys are in general taller and heavier than dull boys." "Mixture of nationality is unfavorable to mental ability." "Colored children grow brighter with age; white children do not." Let us again urge that the field of this interesting study be no longer split up, and that all scientists who are interested in anthropometry lose no time in getting together, and providing a common meeting ground for the exchange of ideas.

Écouvillonage of the Larynx as a Substitute for Retention-Tubage

The ordinary procedure known as intubation of the larynx is essentially dependent upon retention of the tube for a considerable period, and is therefore fairly analogous to the use of the retentionatheter in enlarged prostate and the esophageal *sonde a demeure* in cicatricial stricture of the gullet. Nevertheless the obstructing substance in membranous laryngitis is practically a foreign body, so that permanent tubage may be superseded in time by any procedure which is able to quickly dislodge the membrane. In 1896 two French physicians, Variot and Bayeux, proposed to supercede ordinary intubation by a modification of O'Dwyer's method, which they termed écouvillonage—a term derived from the word écouvillon which corresponds in etymology and definition to the English scovel, a brush for cleaning flues, stove pipes, etc. Écouvillonage, then, simply means a sort of swabbing out of the clogged larynx, and differs from ordinary intubation only in the fact that the tube is withdrawn after a sojourn in the larynx of not more that five minutes, extubation rather than intubation being the most important step in the procedure. The immediate effect of extubation is said to be expulsion of the membrane entire, preceded by acts of coughing, and the operation is palliative or curative, according to the subsequent course of the membrane formation. The technical advantages of écouvillonage over permanent tubage are at once apparent to the pediatrist, since they consist of the avoidance of the various accidents incidental to retention. This method was used in the Hôpital Trousseau, Paris, in 100 cases of membranous laryngitis, reported by Dr. Marie Schultz (Thése de Paris, 1897). She terms the operation proper intermittent tubage. In the January number of the *Jahrbuch für Kinderheilkunde*, Dr. Loewy reports a remarkable case of intermittent tubage, in which the tube remained in the larynx but a few seconds, and extubation was followed by expectoration of a complete cast of the respiratory passages even to the finest bronchioles. While this operatory procedure is of too recent introduction for criticism, it appears to be safe to say that the name écouvillonage is ill-chosen, since it conveys the idea of active dislodgement of the membrane by force exerted by the operator—intermittent or interrupted tubage being the better term—and that whenever in the course of intubation it becomes necessary to take out the tube immediately after its introduction, on account of impending asphyxia, this act of necessity should not be termed a new operative procedure simply because the struggle of the patient against asphyxiation sometimes dislodges the membrane.

Radical Cure of Ascites in Children

There are now upon record perhaps a half score of cases in which the attempt has been made to cure ascites from portal obstruction by the establishment of new channels of collateral circulation through an artificially produced anastomosis of the blood vessels of the liver with those of the abdominal wall. This small number of cases, reported principally by English and Dutch surgeons, has been ample enough to show that the operation may be technically successful, but it appears safe to say that if it ever becomes incorporated into surgery as a radical cure, its field of usefulness will be largely restricted to children. An adult patient with ascites is almost certain to be diseased throughout. He may be a victim of chronic alcoholism, chronic malaria, tuberculosis, etc., etc., but in any case he is in such physical condition that restoration of the portal circulation by surgical art could do little more than prolong life for a few years at most, while the mortality from the operation is very high. It is otherwise with children. Ascites in childhood is not of common occurrence, but it is more likely to happen than in adult ages that the patient may be otherwise healthy. The most striking example of permanent cure of ascites from this operation is to be found in a case of Prof. Talma's. The patient was nine years old, and his cirrhosis and ascites were sequelæ of an attack of scarlatina. The operation appears to have been a perfect ultimate success, and it is significant that the most successful case of permanent cure of ascites was in a child.

SOCIETY REPORTS

PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting, May 9, 1899.

Dr. EDWIN E. GRAHAM, President, in the Chair.

Dr. D. L. EDSALL exhibited a child with a large abdominal tumor, thought to be a **Sarcoma of the Kidney.** The history was entirely negative up to two weeks before the child was seen. Then the mother noticed that the abdomen was prominent and hard on the right side. She knew nothing more than this. The child was pale, rather weakly, and very irritable, but seemed to have no pain. The abdomen was prominent on the right, especially in the upper half. The prominence was found to be due to a large mass of rounded surface, somewhat more prominent in parts, but in general smooth. This moved freely upon respiration, and was readily movable from side to side. The general form of the tumor corresponded quite closely to the kidney. It extended far back into the flank, but could be pressed well forward. The urine contained a small number of red blood corpuscles, but nothing else abnormal. The count of the leucocytes showed about 18,000 to the c.m.m. The differential count showed nothing of importance. Operation had been advised.

Dr. J. P. CROZER GRIFFITH exhibited a case of **Congenital Heart Disease,** in which he had made the diagnosis of pulmonary stenosis, patulous ductus arteriosus, and perforate septum ventriculorum. He followed out the steps by which the diagnosis was reached, and urged the importance of effort in all cases to come to a closer diagnosis than that of "Congenital Heart Disease" merely.

Dr. TYSON.—The murmur is certainly in the pulmonary area. It is a very harsh murmur, and resembles that of pulmonary stenosis. On the other hand, there is also sharp accentuation of the pulmonary second sound, which implies some excess of pressure in the pulmonary artery.

With regard to the route of the blood through the perforated ventricular septum, the question naturally arises, why should the blood pass from the right to the left rather than from the left to the right? The answer is that since the exit of blood from the right ventricle is obstructed by the stenosed pulmonary artery, it passes through the patulous ventricular wall, probably from right to left, because of least resistance in this direction. This surcharges the left side of the heart, while the blood sent through the aortic orifice passes from the aorta through the patulus ductus arteriosus into the pulmonary artery again, surcharging it, and causing the sharp pulmonary accentuation. It does appear to me, from a superficial examination, that there is some evidence of enlargement of the left auricle. There is more dullness on that side than ordinarily there is in that situation.

The reasoning by which Dr. Griffith arrives at his conclusion seems legitimate.

Dr. A. A. Eshner.—I had opportunity to listen but casually, so that, of course, any expression of opinion from observations made here, as compared with those that have been made in the wards, under more favorable conditions, would have little weight. Listening, however, as I did, the murmur seemed to possess peculiarities that I have learned to consider as characteristic of obstruction between the auricles and ventricles, associated with insufficiency. That is, it begins immediately after an accentuated second sound, and with a peculiar vibratic thrill or rumble it continues until the subsequent second sound. I did not percuss the chest, but Dr. Tyson's suggestion of an enlarged left auricle would strengthen the supposition of mitral obstruction. This would not, of course, explain the cyanosis, but there is no reason why, with congenital mitral obstruction, there might not be congenital deficiency of the septum.

Dr. Tyson.—This very thought, suggested by Dr. Eshner, also passed through my own mind, as to whether or not the condition might not be mitral stenosis. The characters of the murmur do coincide with those of mitral stenosis, and it does sometimes happen that that murmur is heard in that situation, while the signs of hypertrophy of the *left* auricle sustain the same view.

Dr. GRIFFITH.—In reply to the remarks of Dr. Eshner, mitral stenosis is an extremely uncommon condition in congenital heart disease. If present, it should give a diastolic murmur, and I have at no time heard such a murmur in this case. I have not listened this evening, and cannot give an opinion regarding the present moment. But if it were present, it is probable that the right side of the heart would show a decided enlargement. This would certainly be the case if the mitral stenosis were a post natal affection. This child has practically no enlargement discoverable. In any event we still have the systolic murmur to explain.

One of my reasons for exhibiting this child was that a few years ago I reposted before one of our local societies a case of perforate septum ventriculorum, in which the diagnosis had been made during life, and confirmed by post mortem. The criticism was made by one speaker that a diagnosis in congenital heart disease was generally impossible, and never more than accidentally reached. While admitting the difficulty and often impossibility which attends, I believe that this case illustrates the way in which a diagnosis can sometimes be made with very great probability.

Dr. ALFRED HAND exhited a case presenting an unusual form of **Paralysis.**

He said : The case is that of a child three years of age. It is the sixth child, of seven. The fifth child of the family was born at seven months, dead. This child was born at seven months, and the seventh child, born last September, was also a seven months child, and lived only five hours. The father, the mother, and the other children of the family are perfectly well. Aside from being a seven months child, this one seemed to be normal, until the end of the first year, when the parents noticed a gradual loss of power in the left arm and leg, which are plastic. This loss of power was very slight at first, but has gone on to the present condition. She never had any of the diseases of childhood, but each summer has had febrile diarrhea. She is perfectly intelligent, can tell her name, and can make attempt at motion. She can move the right foot with difficulty, but it throws the whole muscular system into activity.

There does not seem to be any difference in the measurement of the muscles. The muscles of the left side appear a little smaller than those of the right; this, however, could easily be explained by lack of use. The knee jerks are present, not exaggerated, though I think a little more marked than is usual in children of three.

If the paralysis had came on suddenly, I should have thought of cerebral apoplexy, but it came on slowly. This might be due to a thrombosis, the cause of which I would not venture to state. Why there is a paralysis, to a certain extent, of the right leg also, and why this should be involved in a cerebral thrombosis is not clear. The right hand moves, but there is a slight spastic element, and the muscle-tone is not as good as it should be. The left arm, at each examination, has been in a state of constant spasticity, but the mother says that it sometimes hangs perfectly loose. The child cannot walk; there seems to be no voluntary power in the muscles. In getting around, she can roll over to the left side, but cannot throw the left side over to the right. If the intellect were deficient, I should think of a general gliosis, but with the cortex apparently uninvolved, it is puzzling to me what the condition is.

Dr. Eshner.—It seems to me that there might have been a subdural hemorrhage at birth. The fact that the symptoms were not observed at this time would have comparatively little significance, because they would not appear until the child was able to exercise a certain amount of voluntary control over its muscles. As Dr. Griffith has said, there are distinct athetoid movements which seem to be in the nature of associated movements. The reflexes are exaggerated, and there are other indications of heightened muscular tonicity. The child, further, seems to have a tendency to cross its legs in the manner characteristic of diplegia. It is interesting that the patient was born at seven months, as one or more of the other children also were. This may mean the existence of some maternal pelvic deformity, in consequence of which, perhaps, hemorrhage beneath the dura was superinduced in the present case.

Dr. A. O. J. Kelly.—I am greatly impressed with the truth of Dr. Griffith's statement that, in certain obscure cases, unless the subject comes to necropsy, we cannot be assured of the correctness of a clinical diagnosis. The present case I am rather inclined to view as one of the forms of cerebral diplegia, but in view of the fact that the aunt states that the child's arm is at times entirely flaccid, and since, when the child attempts to execute a voluntary movement, there is coincident contraction of both the flexors and extensors, as well as for other reasons, I think we might not altogether exclude an hysterical element from the case.

Dr. GRIFFITH.—The child is constantly exhibiting some athetoid movements. The case appears to be undoutedly one of some cerebral lesion, the nature of which does not seem clear.

Dr. HAND closes.—With regard to Dr. Kelly's statement, in thinking over the case, I bore hysteria in mind as a last resort, but it seems to me that clonic movements would exclude a simple functional disturbance. I believe that there is some organic change, and I thought of a cortical hemorrhage. All the cases I have seen with that lesion have had paralysis, with a greater spastic element, but I admit that some cerebral disturbance does seem to be the most rational explanation, though the absence of mental impairment speaks against this.

Dr. D. L. EDSALL reported a case of **Congenital Pyloric Stenosis.**

Dr. JAMES TYSON reported a case of **"Generalized Vaccinia."** (See page 73.)

Dr. WELCH.—I have been much interested in Dr. Tyson's description of the case of vaccinia with a generalized eruption, and am pleased to have had the opportunity of examining the photographs, but I must say the lesions do not seem to me to be altogether typical of true vaccinia. I understood Dr. Tyson to say that the vaccination was done on the leg, and that the large lesion seen in the photographs is the site of introduction of the virus. I would call attention to the fact that this original lesion appears to have reached maturity and undergone desiccation while the generalized eruption was still vesicular. Now, this is not in accordance with Bryce's test. He has shown that when vaccination is repeated in an individual on the second, third, and perhaps the fourth days, all of the vesicles mature at the same time. I hardly know what to think of this case. I never saw one like it. I have seen in rare cases a vesicle appear on the cheek, or some other part of the body, after vaccination on the arm, and have regarded it as the result of autoinfection. Jenner taught that a generalized vesicular eruption is not seen in true vaccinia.

Dr. GRIFFITH.—I had the opportunity of seeing this child with Dr. Tyson, and had the photographs taken which he has exhibited. As I understand Dr. Tyson, this case does not show a purely consecutive secondary lesion of the nature which Dr. Welch describes. I understand that the general lesions came out very shortly after the original inoculation lesion, and that they and it are matured at the same time. The photographs certainly show that appearance.

Dr. SEABROOKE.—This reminds me of a case I saw some years ago. A boy of 17 had been vaccinated with lymph from the farm at Marietta, and a week after the vaccination vesicles appeared all over the body, and became almost like hemorrhagic small-pox. The marks were very persistent, remaining for a year. This boy's brother showed similar marks after an attack of chicken-pox.

Dr. TYSON.—The majority of the lesions are on the side on which the vaccination was done. They are on both arms, but more are on the left than on the right. I think in a general way Dr. Welch's observations were true of this case; the pustules appeared in successive groups, and they all terminated at nearly the same time. The simple fact that this condition has been observed in a number of cases shows conclusively, it seems to me, that there is some relation between the vaccination and the lesion. Had I not vaccinated this child with lymph I should have been greatly alarmed.

Dr. L. M. ALLEN reported a case of **Erysipelas** in an infant and a case of **Melena.**

Dr. JOPSON.—I saw the first case mentioned in Dr. Allen's report, that of the infant with erysipelas, and I had previously operated on the mother for a cellulitis of the arm, which had some of the appearances of a streptococcus infection. There was a spreading phlegmonous inflammation extending beneath the flexor muscles of the forearm for a considerable distance, and requiring free incisions for drainage. The wounds in the mother's arm were not quite healed at the time the child developed erysipelas, and the inoculation of the child may have occurred directly, as we now know that the streptococcus pyogenes is in all probability identical with that causing erysipelas. The occurrence of scarlet fever in another child in the family simultaneously, is interesting, because of the frequently repeated observations, that cultures from cases of scarlet fever often show the presence of streptococci, and these have been designated as the cause of the disease by some observers, although the question of their significance is still an open one.

Dr. Ravenel.—It is true that the identity of the streptococcus found in erysipelas with the streptococcus pyogenes is generally acknowledged at the present day, though there is not a great deal of direct evidence in the matter. I recall one case at the Presbyterian Hospital where a child was operated upon for empyema and the pus contained only the streptococcus. While enlarging the incision, in clipping through the rib, a small sliver of bone flew off and struck the house surgeon in the face. Within a few days he developed a severe case of erysipelas, commencing in the wound and evidently resulting from the inoculation. The case was reported by Dr. Arnold in the *University Medical Magazine*. I have seen two similar cases reported in European journals, the refernce to which I am unable to give, but even with these, cases clearly proving the identy of the streptococcus pyogenes with the streptococcus of erysipelas are rare, and this case is well worthy of record. As Dr. Jopson has said, the organism which causes scarlet fever is as yet undetermined. The streptococcus has probably been found more often than any other single organism, and the occurrence of these three cases in the one family, and their sequence, indicate the possibility that they all had the same origin, especially if other sources of infection can be excluded.

Dr. Allen closes.—It is only fair to say that there was scarlet fever in the same street, a few doors above; that this woman who had the trouble with her arm some weeks before the child was taken sick had been repeatedly exposed to this scarlet fever. Now, the question is, whether the susceptible condition of the uterus at that time allowed the germ that started up the inflammation of the arm to gain access in that way. The woman gave no history of injury of the arm. The fact that the condition came on soon after labor, led me to think that possibly a septic embolus had lodged there.

Dr. EMERY MARVEL reported a case of **Noma.**

Dr. WELCH.—I would like to show to the society a very good photograph of a case of noma following measles, which was treated in the Municipal Hospital. It began on the lip. It was cauterized very early with nitric acid, but you will see that the destructive action spread beyond that site, and at the time of the death of the child involved a large part of the lower lip and the cheek. I also show you a photograph of another case of noma following measles, not my own, but one which occurred in the practice of Dr. Shamberg. You will notice how extensive was the necrotic action. The case, of course, terminated in death.

PRACTICAL NOTES

Lupus Erythematodes.

℞ Empl. hydrarg.
Saponat .... āā 30.0
D.S. To be spread on lint and applied to the diseased part.

Von Hochsinger reports a few rare complications of **Parotiditis Epidemica,** which he observed in Vienna, during two epidemics.

1. One case was that of a nephritis acuta hemorrhagica, with uremia, which suddenly made its appearance in a 7-year-old-boy, on the eleventh day of an attack of mumps, being ushered in by headache, vomiting, etc., after the swelling of the parotid gland had already disappeared. The patient recovered, after being confined to his bed for six weeks.

2. A 11-year-old girl was attacked with mumps several times, one attack occurring in the epidemic of 1896, and the other appearing together with measles in 1898.

3. Two cases are described where Von Hochsinger was able to determine with perfect certainty a period of incubation of 3½ weeks at least.

4. In one family Von Hochsinger found measles and mumps occurring together in the same child, in one case mumps and varicella, and in three cases influenza and mumps. —*Centralblatt fur Kinderheilkunde, 1898, No. 12.*

A case of **Staphylococcus Infection of the Blood and the Cerebrospinal Fluld** in a child six months old is interesting on account of the absence of pyemia. The case is reported by Von Lesne. After the case had been cured in 2½ months by asepsis and antisepsis of the skin, and by hygienic measures, the child contracted measles fourteen days later, and died of a broncho-pneumonia. The post mortem did not reveal anything relating to the former disease. It is difficult to determine the source of infection. Just as the digestive and respiratory tracts must be absolutely excluded as the starting point, so also must the affections of the skin be seemingly excluded, as no sign of skin affection was present at the beginning of the disease. If an exogenic infection is, however, sufficient to cause a superficial suppuration of the skin, as furuncles and pustules, the hematogenous origin may probably be found in deep abscesses of the lumbar region, and of the hairy skin, which coincided, in their slow formation with the height of the general affection.—*Gaz. hebd. de méd. et chir 1898.*

E. SCHLESINGNR (*Therap. Monatshefte, 1898*) believes that good results in **Artificial Feeding** can only be obtained if the infant is placed under the same favorable conditions that exert a beneficial influence on the well-being of the child at the breast. This may be shown by a study of dietetics, which teaches us not only the kind of food to use, but also the quantity which is to be administered, according to the age of the child. This is the most important and most necessary factor. We do wrong, and make a mistake, in directing our attention solely to the method of feeding, and relegating the study of dietetics to a subordinate position. Every rational method of feeding may succeed if the rules of dietetics are borne in mind, and no method will lead to success when the principles of dietetics are continuously ignored.

The following is a resumé of the author's conclusions:

I. Success in artificial feeding is based, in the first instance, on dietetics.

II. Dietetics consist in: 1. The administration to the infant of an exceptional chemical and bacteriologically pure cow's milk, and (2) in rigidly adhering to the quantity of food which is physiological, and which takes into consideration the capacity of the stomach for a single meal, taking as a guide for the daily amount of food to be administered the capacity of a normally developing breast baby.

III. The method of feeding is of subordinate importance, as compared with dietetics.

IV. The most rational methods of feeding cow's milk, are those which yield the same value of nutrition as mother's milk.

ABSTRACTS

CHRONIC CATARRHAL AFFECTIONS OF THE RESPIRATORY ORGANS IN CHILDHOOD.

Dr. Aug. Hock (*Wiener med. Blaetter, 1898, xxi., 151*) says the acute diseases of the respiratory organs of children are, as a rule, benign affections, and they rarely pass on to the chronic stage. On the other hand, chronic catarrhal affections after infectious diseases are of frequent occurrence, especially following whooping-cough, measles, and influenza. Besides, we continually observe chronic catarrhal diseases in children who live amid unhealthy surroundings,and who usually have, in addition, some hereditary taint, and these catarrhs are extraordinarily intractable, and often the precursors of a tuberculous lung affection. In rachitic children we frequently find a hyperemic condition of the bronchial mucous membrane,which cannot be called a true catarrh,but frequently runs into such. This affection promptly disappears, as a rule, with the treatment of the rachitis. Adenoid vegetations of the naso-pharyngeal space in many cases are the cause of an intractable cough, in the first instance, and a secondary catarrh of the lower air passages is frequently developed subsequently. The removal of the adenoid growths is indicated in a case of this kind, and the same may be said of the hypertrophied tonsils. As regards the frequency of catarrhal affections after infectious diseases, Hock constructs the following series: Morbilli are followed in about one-half the cases by pertussis, influenza, varicella, scarlatina; variola in childhood, thanks to the general practice of vaccination, is so rare that Hock has not met a case which belongs to this series. Rubeola has never been followed, as far as Hock knows, by chronic bronchitis, although it is frequently accompanied by acute bronchitis. Catarrhal affections following morbilli are especially intractable, and are frequently the forerunner, perhaps the initial symptoms, of a tuberculous affection. Catarrhal pneumonia frequently makes its appearance in its further course. In influenza there is also a marked inclination to the occurrence of this complication. Varicella, especially among the poorer classes, is not the harmless disease that it is usually supposed to be. As regards the symptoms and treatment of chronic catarrhal diseases, exacerbations must be separated from the usual condition. The symptoms are mild, as a rule, the child has a cough but is otherwise seemingly well; it complains, at the most, occasionally of stabbing pains, with some headache; its appetite is somewhat diminished. When the child exerts itself much, or when it has occupied a poorly ventilated schoolroom for some time, the cough becomes worse, and dyspnea shows itself, which, however, soon passes off. As a rule, we are called to see these children during an acute exacerbation of the disease. In very young infants we may confine ourselves to prescribing cooling lotions to the trunk and giving some slight expectorant internally. Where we are obliged to administer some anti-spasmodic, antipyrin, in children under two years of age, should receive preference over true narcotics; this drug may be given in doses of 0.5 to 0.1 gm. three to four times a day without any ill effect. Antipyrin in these doses does not act as a true antipyretic. In older children codeine is an excellent remedy. As a rule, we are able in a few days to dissipate the acute symptoms. Now the chief difficulties of our treatment will really begin. In the first instance we must endeavor to provide as favorable hygienic conditions as possible. First we must overcome the prejudice against fresh air which most parents possess, and teach them that this is the most important factor in the treatment of this disease. The children also should not be confined too long to the house. Where the patient is still an infant in arms this can easily be carried out. We should also, however, insist energetically in the case of older children, that they be sent out into the open air, for to confine such a child permanently to the house, especially among the lower classes, is equivalent to sowing the seeds of tuberculosis, As regards diet, an exclusive feeding of albuminoid food is directly detrimental, and we should see that the patient receives a sufficient amount of fatty food (butter) and carbo-hydrates. The taste of the child itself must, to a certain extent, be considered. If we are fortunate enough to be able to send these children to healthy mountain regions, free from dust, or to the seaside, these bronchial affections can, as a rule, be perfectly cured without any further medicinal treatment. As this procedure, however, is impossible in the majority of cases, the treatment by drugs will have to be substituted. Hock has now used creosote here for a year, using it particularly in the non-irritating form of creostal. Expectorants are of little value in these cases, and are apt to spoil the stomach if used for any length of time. Inhalations of turpentine are, in most cases, not borne well, and, if used for a long period, exert a disagreeable effect on the appetite, not to speak of the danger of nephritis. The treatment with creosote, and especially with creostal, does away with the dangers, and shows its favorable action even where the hygienic surroundings are not perfect. The action of creosote, and its derivative, creostal, is altogether different from that of the previously mentioned remedies. We possess a remedy in this drug which, being directly eliminated by the lungs, acts on the diseased bronchial mucous membrane, as an astringent on the one hand and on the other it is detrimental to the development of the micro-organisms of the bronchial secretion. This is especially remarkable in bronchiectatic changes, where we are able, by the administration of creosote, to deodorize the sputum in a short time and reduce its amount. As regards the mode of giving creosote, Hock administers pure creosote in the beginning in those cases where he wishes to obtain its action as a stomachic.

℞	Creosot puri	1.1
	Ol jecoris aselli	100.0
	Saccharini	00.5
S.	Two or three coffeespoonfuls daily.	

Later on, creosotal was, however, substituted for creosote, and prescribed in a 8/5 per cent. solution. Creosotal is devoid of the irritating qualities of creosote, which are frequently desirable in torpid conditions; on the other hand,it is,however, rarely necessary to continue the creosote in its pure form for any lengthy period. Creosote, besides, is not borne very well in a stronger solution than 2 per cent., and not always in this strength, so that we are obliged, where we wish to give increasing doses, to substitute creosotal. If the appetite is normal we may at once proceed to order a 3 per cent. solution of creosotal and gradually increase it to a 5 per cent. solution. As regards the results of this treatment, which has been carried out by Hock in about 150 cases, a decided improvement is usually observed within ten to fourteen days. After three to six weeks a cure is usually affected. Relapses, which are frequent in the beginning, and more rare later on, disappear in an ordinary way under a short course of treatment. Creosotal should still be continued for some time after the cessation of the symptoms, the dose being gradually decreased. Should a violent cough exist, the indications are to subdue this by means of codeine; this, however, is usually only needed for a short time.

REMARKS ON NOSE-BLEED IN CHILDREN.

Dr. A. Rosenberg (*Centralbl, f. Kinderheilk, 1898, iii,, 329*) states that epistaxis is not so rare an occurrence in childhood as is generally believed; in his cases of epistaxis he finds out of 370 cases that 50 have been in children (up to 10 years of age) a proportion to adults of about 1 to 7, of these three 1-year-old, two each, 2 and 3 years of age, three in the fourth year, four in the fifth year, two in the sixth year, six in the seventh year, three in the eighth year, twelve in the ninth year and sixteen in the tenth year.

Epistaxis, as has been said, occurs not only in the first year of life, but even intrauterine. A year ago Hochsinger published a case of melena neonatorum, in which the meconium was tinted with blood, the cause of which was a copious rhinorrhagia. The liquor amnii of the mother had also excited the curiosity of the midwife and the physician on account of its reddish tint, the more so, as the maternal genitalia did not present any cause for this remarkable phenomenon. The epistaxis of the newborn, which was discovered later on, furnished the explanation. This case was further instructive, as it is demonstrated that malena, as also in a few cases of Swoboda, does not always have its origin (as was until now believed) in the intestinal tract, but may result from a rhinorrhagia. While Swoboda observed the bleeding in his little patients to take place from the anterior nasal orifices, this occurred in Hochsinger's case, through the posterior nares, which from the usual position of the infant on the back is, as a rule, the case. A pharyngoscopic examination proved to him, however, that blood was continually flowing downward from the naso-pharyngeal cavity along the posterior wall of the pharynx, thus at once explaining the situation; as a fact, a tampon applied for a number of hours to the bleeding side of the nose was sufficient to remove the rhinorrhagia, as well as the melena, and to save the child from threatening dissolution. We should therefore always remember in cases of melena neonatorum, that the nose may be the probable or likely source of hemorrhage, the more so as the autopsy in these little unfortunate patients, as a rule, has not revealed any marked lesion of the intestinal mucous membrane; a fact which in itself raises the suspicion that the hemorrhage may at least frequently arise in another locality.

During the later years of child life epistaxis occurs at various intervals from different causes; it frequently makes its appearance with measles, scarlet fever and other infectious diseases, more especially in whooping cough, in nephritis, in anemia, in leukemia, scorbutus, etc. A very interesting case of periodical epistaxis is described by Korstakow; this appeared in a girl 1 year and 11 months old, whose breasts were strongly developed and who already presented hairs on the mons veneris. We all know that in full grown girls menstruation may take place from the nose in a vicarious manner in place of the uterus.

Aside from these local causes—and this is certainly often the case—local changes within the nose may occasion rhinorrhagia. Among the author's cases there are fourteen due to adenoid vegetations which, on account of the venous stasis in the nose, render the children more liable to hemorrhages. Seven cases were due to an eczema at the entrance to the nostril, which played an etiological rôle, by the fact that the children were induced to scratch, on account of the itching of the nose, and thus caused a lesion, especially of the mucous membrane at the anterior portion of the septum, a locality which in children, as well as in adults, is most frequently the seat of hemorrhage. One case even presented the so-called ulcus septum narium perforans.

Some injury, a blow on the nose, a fall on the face, may of course lead to laceration of the mucous membrane and to bleeding from the nose; not infrequently do we then see the hemorrhage under the mucous membrane, and that on the septum. This hematoma is revealed by the appearance on one or more frequently on both sides within the nares of a red, roundish, yielding tumor, which we may surround by the sound laterally, it is true, but which we are not able to separate from the septum in the median line, thus demonstrating its origin. If this hematoma lasts some time, it will develop into an abscess.

As regards the sex, the boys have, according to the author's observations, the advantage over the girls in a somewhat larger percentage (20 to 21). As a rule, the hemorrhage comes only from one side. The information elicited from the parents or friends as regards this is very misleading, and on the other hand the blood may have flown originally only from one side, and later after it had flown from the choana of this side into the other, it may issue from both nasal orifices. If only one side is tamponed, the blood will be stanched if the right side has been struck.

As has been already mentioned above, the source of the bleeding is usually found to be the mucous membrane of the anterior lower end of the septum narium; of course its origin may also be a turbinated bone, or any other part; this, however, is exceptional. There are seen in a rhinoscopic examination, for which, as a rule, the tilting back of the tip of the nose and illumination of the septum is sufficient, dilated blood vessels, bloody points or bloody crusts at this point. If these are absent, it will be sufficient to lightly rub the anterior wall of the septum with a bit of cotton wrapped on a probe to produe the bleeding. To check the latter, as a rule, a tamponing of this locality is sufficient; should the bleeding nevertheless continue, the nose should be sytematically examined to find its source. The repetition of the epistaxis is to be prevented by cauterizing the bleeding spot on the mucous membrane after previous cocainization, with chromic acid applied with a sound. The spot should be first rendered anesthetic, otherwise violent sneezing may occur, which would again start the hemorrhage.

THE INFLUENCE OF SPEECH DISTURBANCES ON PSYCHICAL DEVELOPMENT.

ALB. LIEBMANN (*Deutsche medicinal. Ztg., 1898, xix., 157*) claims that the view that disturbances of speech in children are only of little importeance is altogether wrong. Should such a disturbance be of long duration and extend over the developmental stage (fourth or fifth year of life), grave dangers will threaten psychical development, and Liebmann enumerates many cases from his own practice bearing on this statement. In the first place, the delicate mind of the patient, which in many of these cases is not altogether normal is often greatly depressed by brooding over their speech defect; from the scolding and whipping often given them by their teachers, and by taunts of their comrades. The degree to which the mind is affected is by no means always in proportion to the degree of speech defect, and we meet quite frequently with marked psychic depression in cases where the speech defect is quite unimportant, perhaps only amounting to an esthetic defect. On the other hand, the psychic symptoms are always dependent on the attitude of the parents, teachers, and play-fellows; recrimination, scolding, taunting, are sufficient to distress the childish mind in a most violent manner in cases where only a very slight speech-disturbance is present. Stuttering and stammering persons are especially threatened, and Liebmann met with severe psychic symptoms accompanying even where the person was affected with only very little stammering. Through the removal of the speech defect, the former may frequently be abolished at once, while those cases in which this affection had been neglected in childhood, the patient frequently suffers for decades from colossal psychical depression, which may even lead to suicide. This therapeutic interference at the earliest possible stage is is also absolutely necessary,for the reason that the defect of speech is also of the greatest consequence in the education of the intellectual faculties, and to postpone the treatment will be bitterly regretted, as the retardation of the mental development progresses and treatment becomes more and more difficult.

VACCINAL IMMUNITY.

CAMBON and MENARD (*Ann. dé l'Institute Pasteur, 1898, No. 12, 1899, No. 2*) give the results of the following experiments:

Some active vaccine lymph is placed in two test tubes. To one tube is added blood-serum drawn from a heifer before vaccination, and to the other blood-serum obtained after vaccination. After forty-eight hours a heifer is vaccinated from the contents of each tube on a different side of the abdomen. Vaccination from the first mixture gave typical vesicles which contained active lymph; that from the second mixture resulted negatively. Similar results were obtained in the horse, and in mankind. As a rule, this antitoxine appears in the blood about twelve days after vaccination, but immunity is not dependent upon the presence of antitoxin, as it may persist after the antitoxine reaction is no longer obtainable. The antitoxine reaction itself may persist for twenty-five and even fifty years after vaccination.

BROMOFORM IN WHOOPING-COUGH.

COHN (*Thera. Monat., January, 1899*) has treated whooping-cough with bromoform for the last six years. Some cases were remarkably benefited, while others were not affected by the drug. This uncertainty in action may be due to the fact that Ritter's bacillus is not always present in cases of whooping-cough, and that sometimes the disease is due to a mixed infection. The poisonous effects of the drug must be strenuously guarded against. The practice of giving it in drop form is not safe; the child either gets a very full dose or a very small one, and the amount cannot be accurately measured in this manner. The author has given the drug in the following manner, and has never seen any unpleasant symptoms follow: Bromoform 0.5-10 or 2.0 dissolved in rectified spirit and gum arabic, equal parts, 5.0-10 or 20.0 aq. destill 100.0, syrup aurantii. The dose is one teaspoonful. This emulsion keeps well. It is important that bromoform should be dissolved in equal quantities of alcohol in order to prevent particles sticking to the sides of the glass. This mixture is then rubbed up with ten times the quantity of gum arabic. The water is added gradually. The emulsion should be made as rapidly as possible in order to prevent the bromoform from volatilizing. Syr. aurantii diminishes the sickly taste of bromoform and gum arabic.

PEDIATRICS

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ORIGINAL ARTICLES

MALARIA IN CHILDREN.

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THERE is no more interesting subject in the pathology of childhood in Rio Janeiro than malaria. In fact at the present time no one ignores the important rôle which this disease plays in the tropics, for it is not only common and severe itself but also exerts much influence upon the other diseases, infectious or otherwise, which afflict children. It is especially apparent to the practitioner that infantile malaria is quite unlike the same affection in the higher ages, and possesses, as it were, a particular *cachet*.

The subject is no less important from the social than from the medical standpoint. In addition to the mortality, which is considerable, the malarial intoxication plays an important rôle in the causation of the sickly condition of the population of our capitol as well as that of many of our large towns, and the resulting physical and mental deterioration must naturally come in time to affect the heredity of the children, who are at the same time exposed to precocious infection.

It cannot be gainsaid that malaria, by retarding the physical growth of the child, checks at the same time its mental and even, perhaps, to some extent, its moral development. The seal of dystrophy, which exists in the majority of the little ones who pass in review in my service, is attributable to one of three factors—viz.: syphilis, tuberculosis and *malaria*.

After considerable experience in a field as large as mine one discovers a resemblance between malaria and syphilis to the extent that both affections cause physical and mental deterioration. Burdel, too, was not in error when he sought to compare the cretinism of the Alps with the mental and physical deterioration observed in flat paludal regions. The early appearance of malaria in children is not necessarily due to direct paludal infection, but, in part, to hereditary transmission, at least as far as the question of dystrophy is concerned.

From the moment at which I began to study pediatrics in Rio Janeiro my attention was strongly attracted to the predominance of malaria over all other affections of childhood, and I regard it as a duty to deliver successive lectures upon all the phenomena of malaria in young children for the benefit of medical practitioners, especially those in Rio Janeiro, who cannot ignore this element of malaria without compromising the interests and risking the lives of their little patients.

The following studies are based upon a total of 5,000 cases of malaria observed in all the periods of childhood. In order to give an idea of the frequency of this affection at Rio I will give the total number of cases treated at my service in 1891 and 1892.

	1891.	1892.	Total.
Total cases	636	765	1,401
Cases of malaria	242	271	513

These figures show that 36 per cent. of the total morbidity is due to malaria. The following table gives the number of cases of malaria at different periods of childhood:

	1891.	1892.	Total.
First three months	37	41	78
Three months to one year	91	55	146
One year to three years	56	62	148
Three years to seven years	52	76	128
Seven years to fifteen years	42	27	69
Total	278	261	569

It appears, therefore, that malaria is most frequent during the first year of life. Out of a total of 539 cases, 198, or about 35 per cent., occurred during this period of childhood. Of the remaining cases about 45 per cent. occurred between the ages of two and seven years.

These figures, derived from my personal cases, do not differ much from those of other clinicians, who have especially investigated this subject. Almost all of these observers have the same opinion as to the predilection of the disease for the first years of life and the greater severity of the disease at this period. As long ago as 1847, Semana, in an article published in the *Gaz. med. de Paris*, p. 939, upon pernicious fever of nurslings, affirmed that this affection is the most treacherous of all maladies from which the children of Algeria suffer. He adds that in the pernicious fever of children the disease reveals its nature at a very early period, thereby differing from the course pursued when adults suffer from the same malady. Bouchut, in his work on diseases of the new-born (Fifth edition, Paris, 1867, p. 676), states that there are few diseases of infancy which offer so much of interest as malaria. Burdel, who published a work on paludic fevers (Paris, 1857), states that in a malarious locality he found, as a result of his own investigations, that 70 out of 100 children presented stigmata of malaria, and that the disease was especially common in nurslings. Galligo (Igiene e malattie dei bambini, second ed., Firenze, 1871), states that intermittent fever is of more frequent occurrence in little children, and also that its accesses are more irregular. Another Italian investigator, Pasquali, in his work on children's diseases, published in 1873, expressed the same opinion. Steiner, in the French translation of his compendium on children's diseases (1880, p. 682), states that in one Hungarian village where malaria was endemic he found 50 children with enlarged spleen, and that two-thirds of these were being nursed by mothers who were in perfect health.

In the United States of America Meigs and Pepper in the fifth (London) edition of their treatise on diseases of children, state that they had met with cases which appeared to demonstrate that the susceptibility of children to malaria was always greater than that of their parents or other adults under the same circumstances. The localities covered by the observation of these authorities were not highly malarious.

D'Espeine states in his manual of children's diseases (third ed., 1884), that whenever an epidemic of malaria appears in a locality it is generally the children who are first attacked. Mercier, in his manual on the same subject (Paris, 1892), states that children are more exposed to infection, and that they are attacked earlier and with greater frequency than adults.

Edouard Pepper, who practiced in a small Algerian town saturated with malaria, says that paludic intoxication occurs much more frequently in young children than in adults (De la malaria, Paris, 1891, p. 101).

My lamented friend, Boisesco, of Bucharest, published a memoir on erythema nodosum of paludic origin in young children in which he states that almost all morbid states in the young are complicated with malaria.

M. Jules Bouvier, in his work on the milk (Paris, 1893), describing conditions in Syria, states that in marshy countries children suffer much more during the hot season on account of the greater virulence of the germs of paludism.

The foregoing citations should establish beyond doubt the fact that young children are more susceptible to malaria than are their seniors.

I shall now consider a subject which imposes itself upon our attention, viz.: May malaria be developed during the prenatal state of the child? There is certainly no subject which is more difficult to discuss or which has more controversy than the heredity of malaria. In spite of a certain number of facts on the affirmative side, there are few authorities disposed to accept as a fact the existence of fetal malaria, and the majority of writers do not even give themselves the trouble of contradicting the statement.

M. Charles Leroux, in an interesting paper upon this subject, published in the *Revue Médicale de Paris*, 1882, sums all the data which had up to that time accumulated upon the etiology of malaria. First he quotes the opinions of Boudin, Beringuier, Playfair, Bouchut, and others in favor of the doctrine of the transmission of the infection through the placenta, while not omitting the formal denial of Burdel (1857). He then adduces more positive and convincing clinical observations by Stokes, Schurig, Steiner, Deboué, Sue, Hawelka, Playfair, Bohn, Duchek, Pitré, Aubinais, Blachez, Bureau, Carles, Henrot, etc., to which names I would add those of Meigs and Pepper, Jaequemier, Reil, W. C. Taylor, Bechmann, Bonfils, and Ed. Pepper.

The foregoing authors vary in the import of their remarks, but many of them accept the doctrine of heredity without question. The belief is that mothers who, during their pregnancies, are overtaken by paludic fever, give birth to offspring which at the moment of birth present splenic stigmata or other marks of malaria, some having intermittent fever immediately after their entrance into the world.

As far as my own experience goes I am disposed to arrange myself with the advocates of the congenital theory, because I have often had occasion to observe facts which appeared to be very positive. It would take too much time to give them in detail, for there are more than 20 of them, and I think I can give a sufficiently complete idea of them by relating some of the more conclusive cases.

A lady, under my care at the ninth month of her pregnancy, was taken with paludic fever, and her attacks, in spite of the uninterrupted daily administration of quinine, were renewed with alternate exacerbations and remissions to such an extent that on the day of the delivery of the child, at which I assisted, the fever was increased, the temperature actually remaining at 39° during and after the labor. In spite of this condition she bore, without accident, a male child who, after a thorough examination, made immediately after birth, was found to have an enlarged spleen and who, some days later, was found to have a high rectal temperature. This fever, after returning for several days, finally disappeared. The child, never entirely free from his congenital affection, died of pernicious fever at the age of five years, despite the fact that he had always lived in a very healthy town where this type of paludic fever was usually very benign.

More recently, while delivering my course of lectures in 1897, I called the attention of the students to three cases even more convincing. The first one relates to a woman suffering with quotidian malarial fever which began during the first month of pregnancy and continued without interruption until the moment of delivery. The child had a supernumerary finger and presented, even at the moment of birth, very marked fever. Twenty days later, having been recalled, I verified the presence of the characteristic stigmata of malaria, the rectal temperature also being as high as 39°.

The second case is as follows: On October 19, 1897, I received under my care a little girl aged 12 days, very sickly having been born before term. She had a senile facies, and the skin was parched and covered everywhere by a papulo-vesicular efflorescence. The pharynx was the seat of thrush.

She was vomiting all her milk, and had severe colic, with frequent greenish stools, although nourished entirely at her mother's breast. The extremities were always cold, despite the fact that the temperature of the trunk had been elevated even from the moment of birth. Both liver and spleen were tumefied. The mother stated that she was living upon the banks of a river which ran very slowly. She probably contracted there a paludic intoxication which persisted up to the moment of the delivery of the child. Quinine appeared to be without action upon both mother and child, until, after a change of residence, when the remedy produced rapid and permanent improvement.

The third and last case concerns a boy aged 2 months and 11 days who went under my care in December, 1897. His parents lived in an unhealthy community, outside of Rio, in a lowly-situated, damp, poorly-ventilated house. The mother had attacks of fever throughout her pregnancy, and stated that at birth the child presented a temperature much above the normal, and that, as she nursed the child herself, she was able to say that the fever had been present throughout. The boy showed evident symptoms of severe paludic intoxication, such as marked weakness, fever of remittent type, high degree of lithemia, abdomen swollen, fetid diarrhea, liver and spleen much enlarged. The specific treatment came too late, and the child died within a few days.

The constant progress in bacteriology authorizes us to accept, theoretically, until passible further developments, the likelihood of the transmission of disease from the mother to the child through the placenta, as many already admit in the case of syphilis. Everyone is aware that the discussion of the hereditary transmission of this latter disease was for a long time barren of results, until the well-known researches of Strauss and Chamberland, communicated to the Biological Society (Paris), in 1881–82, were successful in demonstrating that certain germs, such as those proper to charbon, chicken-cholera, septicemia, etc., could enter the embryo of animals by the placental circulation. Although the microbe of syphilis still remains undiscovered, the authors assumed that the congenital manifestations of that disease originated in the same manner. There is then no reason for refusing to entertain the supposition of the probability of the transmission of the malarial germ from the mother to the fetus through the placental circulation, although researches conducted for the purpose of verifying this very legitimate hypothesis have proved unsuccessful.

Garrieri and Bignoni failed to find Laveran's plasmodium in the blood of two fetuses, aged respectively 3 and 6 months, of intrauterine life, although the mothers presented signs of paludal cachexia. The possibility of the passage of the germ in question through the placenta seems the more admissible after the researches undertaken concerning the transmissibility of typhoid fever; for Eberth, Chantemesse, Vidal, and others, have found the bacillus typhosus in the fetus. Marfan (Typhoid Fever in Children, Paris, 1894, p. 5) upholds this view, and cites a very instructive case from the practice of T. Janisewski, which is here reproduced:

A woman contracted typhoid fever at the eighth month of pregnancy, and twelve days after her admission to the clinic she bore a child which lived but five days. Autopsy revealed a hypertrophied spleen, although the intestines were normal. Cultures made from the lungs, spleen, kidneys and mesenteric ganglia showed the presence of the bacillus typhosus. Under these circumstances, it is not hard to understand that the results of intrauterine infection are the more grave in proportion to the uninterrupted character of the contamination of the fetus, since the latter has no means of eliminating poisonous substances. Speaking generally, the experimental proofs of the passage of the micro-organisms through the placental vessels lead us to suppose that the hematozoon of malaria is no exception. It is proper, however, not to overlook the difficulties which surround this problem in its application to Rio, and to bear in mind that a newly-born child may also be directly infected soon after birth. In order, then, to fully understand these cases of malaria in the new-born, we must know all the surroundings of the patient.

An analysis of my cases, with regard to the influence of race, gives the following results:

	1891.	1892.	Total.
White	159	187	346
Mixed	61	64	125
Negro	22	20	42
	242	271	513

These figures show that the children of negros escape infection more readily than white children; nevertheless, the alleged exemption of the negro from malaria, formerly claimed by Boudin, is far from being confirmed. Numerous exceptions to the rule given by the distinguished French observer have long been noted by physicians who have studied paludism in Ceylon, the Antilles, and other regions inhabited by blacks. But it must not be forgotten that both the negro and mulatto offer greater resistance to paludic intoxication than do white children, and also recover more promptly.

With regard to the sex of my 513 cases, 274 were boys and 239 girls, a majority of 35 in favor of the former.

Wishing to learn the relations subsisting between the frequency with which the disease occurred and the residences of the patients, I compiled the following table:

	1891.	1892.	Total.
Children inhabiting the commercial portion of the city........	81	54	135
Children inhabiting the working-class quarters................	103	161	264
Children in outlying districts..................................	58	56	114
	242	271	513

It therefore appears that over one-half of the little patients come from the working-class quarters, in which the habitations consist almost always of a dark ground floor, badly ventilated, placed directly over humid soil rich in organic matters. These children are exposed to bad hygienic conditions, and furnish the largest contingent in the mortality of malaria.

Laveran, in his work on the hematozöon of malaria (Paris, 1891), draws upon his personal observation in the towns of Constantine and Bône, and states that the inhabitants of the upper floors of a house are less exposed to infection than those on the ground floor, it being difficult for the germ of paludism to rise. But it is not to be believed that the children belonging to the rich or comfortable classes are altogether unexposed to danger from malarial intoxication, for many circumstances which occasion domestic unwholesomeness—transitory, accidental, or artificial—will be sufficient to produce it. It would be easy for me to relate certain examples, but I shall content myself with saying that the same thing may happen in other towns of which the climatology and telluric conditions are much less favorable for the development of paludism than are those of Rio.

I will cite some facts which my distinguished friend, M. Jules Simon, has carefully collected and indicated in his clinic, and which have to do with children who live in spacious and splendid residences situated in the most salubrious localities. The malaria in these cases originated either from the woodwork of the houses or the emanations from the drainage wells which were located in the sumptuous gardens of the residences.

Everyone admits the powerful influence of heat upon the development of the virulence of the germ of paludism, and modern research into the geographical distribution of the disease limits the latter unmistakably to warm countries. Nevertheless, in a country so vast as Brazil, made up of territories which differ from one another, not only in climate, but also in telluric conditions, one would expect paludism to exhibit corresponding variations. And as a matter of fact, in the absence of complete statistics on the subject, a study based on clinical observations would incline us to believe that the nearer we approach, the equator the more frequently does the disease occur, to such an extent that it is unknown in some localities in South America, which have a temperate climate like that of Europe and North America. Moreover, we must consider the important rôle which the seasons play upon the recrudescence of the disease, as well as the type exhibited. It would be interesting to analyze my 513 cases with regard to the month in which the disease developed:

	1891.	1892.	Total.
January	25	23	48
February	31	28	59
March	34	32	66
April	29	12	41
May	20	23	43
June	10	18	28
July	16	16	32
August	12	32	44
September	10	24	34
October	19	27	45
November	14	19	33
December	22	17	39
	242	271	513

These numbers exhibit a greater proportion during the first three months of the year, precisely the acme of our summer season; indeed, we find during this period 173 cases, or more than a third of the entire number during the two indicated years. And *vice versa* the number of patients diminishes during the months of June and July, which yield together only 60 cases, or less than the month of March. This marked diminution in the frequency of the disease coincides with our winter season when the meteorologic and telluric conditions become much less propitious to the vitality of the germ. If we inspect the meteorologic conditions a little more closely it will be readily seen that long periods of droughts and oppressive heat succeeded by abundant rains exert an influence upon the morbidity of the disease. This but confirms the fact, already observed in other countries where malaria is endemic, that the humidity consequent upon the effect of a short rain after a period of drought renders the soil unhealthy, and favors the multiplication of the germ of paludism. We now have forced upon our attention a very important subject, viz., the intimate nature of the disease and the manner in which the germ gains entrance into the economy.

Surmises as to the parasitic nature of the disease go back to the most remote epochs of history of medicine, this hypothesis having been raised by Varron, Vitruve and others. Up to 1866 the most contradictory opinions were entertained by those most conversant with the subject through experimental investigations, one school holding that the parasitic organisms are suspended in the air of marshy localities, while the opposing side maintained that the disease was due to emanations from certain vegetable life common to marshes. Modern scientific research dates from this period, inaugurated by Salisbury, who was followed by Binz, Balestra, Lanzi, Ferrigi, and Eklund; while in 1869 Tommasi-Crudeli and Klebs announced the discovery of a bacillus malariæ found in the soil, air and water of paludic countries, which germ, cultivated and inoculated into animals would, in the opinion of its discoverers, reproduce the disease. These conclusions, accepted at first by Celli, Marchiafava, Cuboni, Ceci, Ferrareni, and other Italian observers, eventually began to give way in the minds of investigators until, in 1880, Laveran published the results of his first experiments upon the cause of the disease, which were confined to determining the rationale of the decomposition of pigment in the blood of malarial patients. In addition to the melanotic leucocyte, he discovered the presence of a corpuscular, spherical, hyaline and pigmented element in the blood which underwent development. Soon afterwards he discovered that these corpuscles put forth filamentous processes, or flagella, endowed with lively movements, and all his original doubts as to the animated nature of these elements vanished. Further investigations brought certainty that these parasites live in the blood at the cost of the hematin, which they destroy. The no less remarkable researches made at the same time by Marchiafava and Celli, which led to the discovery of the plasmodium malariæ, seem to discredit the results obtained by Laveran. The discovery of a malarial parasite, although confirmed by many eminent observers, has also given rise to scepticism or opposition on the part of others, such as Pfeiffer, Hoffmann, Dujardin-Beaumetz, and Treille, who claimed that they had found the hematozoon in individuals suffering from diseases other than malaria, and even in people in perfect health. Others, for example Professor Guido Baccelli, of Italy, arrived at only negative results. In North America James, who took up the study of the blood in general—but not including malaria—found organisms which could readily be confounded with Laveran's plasmodium. Study of the hematozoon, therefore, is by no means as easy as has been claimed. It requires valuable time, which does not permit refinements of diagnosis, and which does not demand the immediate application of specific treatment, especially when the disease is of the pernicious type, when the delay requisite for a microscopic examination might endanger the life of the patient. In children's clinics still more obstacles have to be overcome before a microscopic examination can be made, because the parents usually object to the repeated performance of pricking the skin to obtain blood.

(*To be continued.*)

ENLARGEMENT OF THE TIBIAL TUBERCLES.*

By Henry Ling Taylor, M.D.,

New York.

IN the last few years I have seen several cases of the enlargement of the tibial tubercles in children and adolescents. The swelling usually came on without known cause. In one or two cases the swelling had lasted a considerable time, was not sensitive at the time of examination, and was seemingly a permanent bony enlargement due to previous inflammation. The pathology evidently differs in different cases, as in the two here reported, but the affections seem to be osteitis, or periostitis, which, as in the second case, may be of traumatic origin or, secondary to a bursitis. The bursa over the tibial tubercle is said not to be constant. The tubercle is developed on a lip of the epiphysis, and its proximity to the actively proliferating epiphyseal line may render it specially sensitive to traumatic, or other irritation. The following cases will serve to call attention to affections at this point, which seem to have attracted little attention:

Case I.—Acute Inflammation of the Tibial Tubercles.—A boy, aged twelve, was first seen at the out-patient department of the Hospital for Ruptured and Crippled, May 3, 1899. Without injury, or other known cause, the left tibial tubercle had begun to swell and become painful one week before; three or four days later, the right one became similarly affected.

Examination showed both tibial tubercles enlarged and tender (Fig. 1), the left more than the right. The swelling was hard, and appeared to be bony. Local applications of Churchill's tincture of iodine were followed by prompt and decided improvement. After two months there seemed to be nothing abnormal, except moderate bony enlargement.

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* Patients shown at the meeting of the New York Orthopedic Association, June 1899.

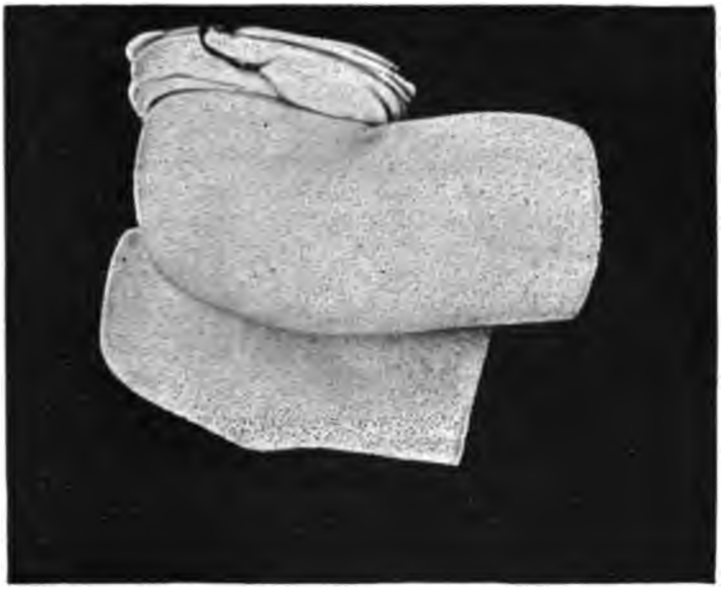

FIG. II.

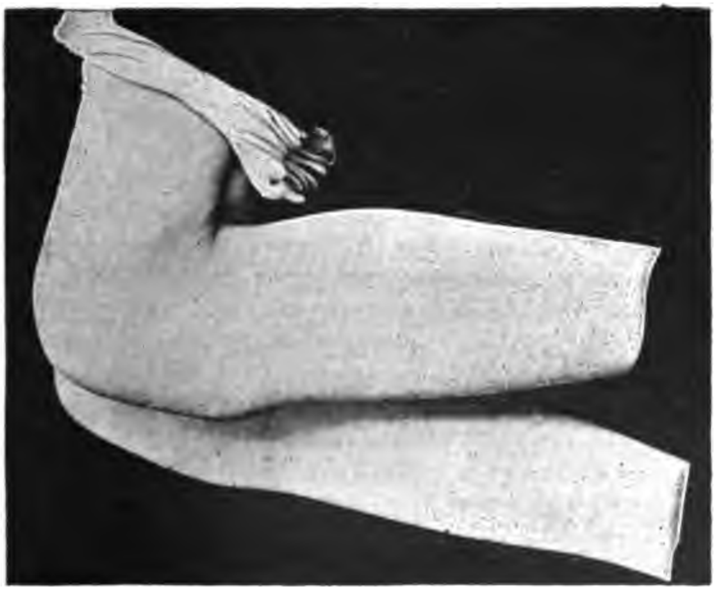

FIG. I

Case II.—Inflammation of Bursa over Tibial Tubercle, with Involvement of Subjacent Tubercle.—The patient, a lad of sixteen, was first seen at the out-patient department of the Hospital for Ruptured and Crippled, May 10, 1899. Eight months before he had fallen, striking below his right knee. Enlargement of the right tibial tubercle followed and still persisted, though the swelling had somewhat decreased. Examination showed a well defined swelling, about one inch in diameter, of and over right tibial tubercle (Fig. 2). There was some elasticity over a hard base. Under local applications of Churchill's tincture the swelling decreased, and the elasticity disappeared, leaving the tubercle considerably enlarged.

A Case of Bilateral Anophthalmos Congenitus.—Lehmann, in presenting the case, said: The designation anophthalmos is really not correct, as rudiments of the bulb have always been found in those cases where they were carefully looked for; at times, it is true, these could only be demonstrated microscopically. How much of the eyeball is present in the case presented by Lehmann to the Berliner Med. Gesellschaft (19, i., '98) could not be positively determined, as the palpebral fissure, which was only 5 mm. wide and very narrow, does not permit a minute examination, and as the parents will not permit any other interference. Nothing seems to be present macroscopically, at least palpation does not show anything. The child comes from healthy parents, not related, in whose families similar malformations or malformations of any kind are unknown. It is, however, interesting that of the three children which they now possess the oldest boy, now 4½ years old, has perfectly normal eyes; the second, now 2½ years old, was, however, born blind from a bilateral mikroöphthalmus. The present child, also a boy, was born January 1, 1898, and is otherwise free from any abnormalities.—*Berl. klin. Wochenschr., 1898, xxxv., 108.*

NIGHT TERRORS IN CHILDREN.

By Julius Morgenstern, A.B., M.D.,
New York.

THERE is no condition that will give greater anxiety to parents than that of night terrors in children, therefore a few remarks on the subject, with its proper treatment, may not be taken amiss. The following case has been chosen for illustration:

Boy K., aged 4 years, would sleep quietly at night for one or two hours, and then would suddenly awake in great alarm, point to some object or place in the room, and wildly cry out that he sees the devil, that the devil wants to take him away, and that his mother should please drive the devil out of the house. This same performance was enacted once or twice every night for a few weeks. It taxed all the mother's patience to quiet the child, so she determined to summon medical aid.

On questioning the mother, the information was obtained that the boy had been unruly, and she had told him that if he wouldn't behave himself the devil would come and take him along. The boy was anemic, had coated tongue, little appetite, and was pale and worn out from the strain of the nervous excitement and loss of sleep.

The first and most important treatment was to rid the child's mind of the impression of the devil. The mother told him that it was all a mistake, that there was no devil at all to take him away. I told the boy the same thing, as he would not believe his mother alone.

He was also placed on tonic treatment, solution of iron and manganese, twenty drops in a little water three times a day. The child was somewhat constipated, and citrate of magnesia and later small doses of fluid extract of cascara sagrada were used to correct the constipation. A simple diet, easy of digestion, was ordered. No food was allowed before retiring, and the last meal was given early in the evening. A small light was kept burning in the bedroom all night, and the mother's bed was placed next to the boy's cot. As soon as an attack came on, the mother was told to speak gently and soothingly to him, as nothing would be accomplished by harshness.

This treatment resulted in a cessation of the night terrors in a week's time, though the medicinal treatment was persisted in for a few weeks longer.

The foregoing case teaches us the following: That mothers should not, by any means, frighten their children when they misbehave; that we will generally find some gastro-intestinal derangement co-existent with the attacks; that tonics and aperients, with a light wholesome diet, will accomplish very much; that there is no necessity of any sedatives or hypnotics, and that, most important of all, we should not forget to be gentle and kind to the patient.

A Case of Erysipelas Migrans.—LANDAN reported this interesting case of a child 4 months old to the Surgical Society of Nürnberg (6, i., '98). The patient was well nourished and kept clean by its parents, who belonged to the higher class. Arising probably from an intertrigo of the left genital fold, passing from here over the left thigh, then involving the right thigh and the abdomen, the attack of erysipelas within a week gradually traveled over the whole body of the child, pausing in the neck at the margin of the hair, passing over both arms and the left half of the face, and only left intact the hairy part of the scalp, the right half of the face and the forehead. During its whole course there was continued fever, which was at its maximum, 39 to 39.2°, and its minimum 38.5°. Healing was followed by great scaling. Erysipelas is found in the new-born, arising at the navel later; it occurs less frequently, and usually starts from an intertrigo. Its wandering over the greater part of the body, as in the present case, has hardly ever before been observed. The favorable issue in this case is the more remarkable, as the treatment pursued (enveloping the child in oiled wool and thymol baths) in all probability only exerted a very slight influence.—*Munch. Med. Woehenschr., 1898, xlv., 777.*

AN ATYPICAL CASE OF MEASLES.

By Frank H. Rowe, M.D.,
Cincinnati, Ohio.

MARY L., age 4; German; has never been sick since birth, and is of excellent parentage. She suffers from no constitutional dyscrasia. Her hygienic surroundings are not the best. The mother states that four days before an older sister had the measles, which she, herself, treated. It was apparently a mild case. At the same time she noticed that this child had fever, which gradually increased. She was compelled to take her bed, and the parents naturally attributed her sickness to the infection of measles. They gave the usual home treatment, until the symptoms, by their coustantly increasing severity, became very alarming, At this time I was called to see her. She had fever then five days. Her symptoms thoroughly impressed one of severe infection. The fever, by the thermometer, registered the maximum temperature of a severe typical normal case of measles, 104½°. Without producing the chart, I will state that the fever continued steadily for ten days, and then gradually declined to *normal*, without the slightest exanthemata. Accompanying the fever, the other symptoms were of a very grave character, typhoid in nature. The nervous symptoms were especially marked, delirium, muscular twitchings, meningeal irritation, severe headache, increasing lateral movements of the head, with burrowing of the occiput in pillow, accompanied with sharp shrieking, markedly accelerated respiration, dry cough, uncontrollable choleraic diarrhea, with persistent colic, requiring anodynes, urine scant and involuntarily discharged. Symptoms began to improve about the eleventh day, and a couple of days later she was thoroughly convalescent, when a younger sister developed an ordinary case of measles. And just at this stage, when I had diagnosed my case as morbilli sine exanthemata, all subjective and objective symptoms having entirely disappeared, and having left no trace behind whatever on the fourteenth day of my attendance; upon the nineteenth day from the beginning of the primary fever, which indicates when the specific poison is generated in the system, a *very copious* general eruption of measles appeared, which followed the usual course, without *any* systematic disturbance. The history of this case is also interesting, as showing the important part which the specific inflammation of the skin assumes in exanthematous diseases.

A Rare Form of Small Epileptic Seizures.—KRAUSE believes that there are epileptic seizures in which only motor disturbances make their appearance, either in the form of convulsions or momentary relaxations. Seizures of the latter form are very rare. Krause observed two such cases in the Neurological Clinic of Jena—one occurred in an adult, the other in a child—and reported them in the Medical Society of Jena, 18, vii., '98: (1) A man, 28 years of age, has suffered with epilepsy since 1883. He presents also small rudimentary seizures, beside the typical attacks, which consist in his suddenly bending the knees, or in his sinking or falling to one side, or his arms suddenly falling down, without any loss of consciousness or even its obscuration. The attacks last one-half to one second. They occur without any aura or following symptoms, and are here and there mixed with slight spasmodic symptoms in the muscle groups not involved. They occur quite frequently at times, and have a tendency to appear in series. (2) A 7-year-old child suffering from epilepsy, due to hereditary syphilis. Complete attacks are of very rare occurrence, much more frequent are the rudimentary (especially the so-called salaam convulsions) and small ones. Among the latter seizures very rarely occurred (five times during an observance of eight weeks), which are apparent only in the bending of the knees, or the falling of the whole body, or the falling down of the hands, consciousness not being disturbed. The attacks last one second at the longest. According to the theory of epilepsy introduced by Hugling Jackson, modified by Gowers, and recently elucidated by Binswanger, we must look upon these attacks as caused by inhibitory discharges, which involve only the psychomotor region of the cerebral cortex. In a number of the attacks exciting discharges obviously are also present, as we see them in the jactitations which accompany the relaxation of the muscles.—*Munch. Med. Wochenschr., 1898, xlv., 1103.*

EDITORIAL COMMENTS

Nature of Acne and Impetigo

Two diseases of frequent occurrence in the young have had a considerable degree of light shed upon their etiology during the past year or two. One of these conditions is acne juvenilis, which usually begins slightly in advance of puberty, while the other is the specially contagious form of impetigo, which may occur epidemically, and even endemically, among children. Ever since the discovery of the pyogenic staphylococcus, it has been claimed that this germ is responsible for the occurrence of these two among many pustular affections. This statement occurs in most text-books, and even an expert authority, such as Payne, of London, one of the very first to study pyogenic cocci, states somewhere that to facilitate the cure of acne it is necessary to keep the scalp thoroughly clean, because the staphylococcus occurs abundantly as a saprophyte in human dandruff, and is transferred very readily to the integument of the face by the patient's fingers. It is difficult to understand how such views ever gained a foothold. Even without bacteriological study, it is readily seen that the suppuration of acne is far from having staphylococcus qualities. Acne never infects in any sense—the neighboring lymph-ganglia are not involved, despite the number and severity of the acne pustules and metastases are unheard of; the ordinary acne pustule is not followed by destruction of tissue and scarring (when this occurs a mixed infection was doubtless present); finally, acne is never inoculable — never causes or results from other pustular or purulent lesions. It is not surprising that the staphylococcus, which is ubiquitous, may often be found in acne lesions or acne pus, but there is every reason for disbelieving that it plays any etiological rôle in the production of the disease. Several years ago Unna believes he found the true acne germ—a peculiar bacillus—which produces both the comedo and the pustules; but he was unable to cultivate this bacillus. Another observer subsequently held that Unna's bacillus was allied to the bacillus coli, and only present in acne as a saprophyte, the true cause being the staphylococcus epidermidis albus, which causes the "stitch-abscess" of the surgeon. At the latest meeting of the American Dermatological Association, Gilchrist announced that he had conclusively shown that a bacillus (probably that described by Unna) is invariably present in acne, and is in all likelihood the cause of the disease. We have therefore bacteriological as well as clinical evidence that acne has no connection whatever with other pyogenic diseases.

The history of impetigo contagiosa is similar to that of acne. Originally classed as a staphylococcus disease, and still claimed as such by the English, it has gradually been demonstrated that the staphylococcus, while able to cause a variety of impetigo pustule as an accompaniment of boils and sycosis, is only accidentally or secondarily present in impetigo contagiosa. Clinically, the latter affection, like acne, presents none of the qualities of staphylococcus suppuration, while of late years many good investigators have persistently found streptococci in an apparently pathogenetic relationship with this highly contagious affection. Gilchrist (*vide supra*) is the most recent investigator to declare that a form of streptococcus is the actual cause of the disease. Can it be the ordinary streptococcus pyogenes (which it is said to greatly resemble) in an attenuated form? We believe not, for the rapid passage of the germ through so many children ought from analogy to arouse all the virulence of that somewhat malignant organism. As the streptococcus pyogenes is already held to be responsible for erysipelas, to say nothing of surmises that it may be the active agent in causing scarlatina and even perhaps variola (?), it is manifestly absurd to connect it with so mild and harmless and generally prevalent an affection as impetigo contagiosa.

"Christian Science" and Pediatrics

The claim, so frequently heard of the enemies of medical legislation, that our present medical laws are examples of pure paternalism, and doomed, therefore, to be declared unconstitutional in time, does not apply to the relationship subsisting between medical practitioners and children. For while it may be true that the attitude of the State to the responsible adult, man or woman, is becoming more and more one of *laisser aller*, it is entirely apparent that the State is becoming more and more paternal in its attitude toward the child. It was not so very long ago that a father could slay his child without being called to account for the deed, but during the present century the State has assumed an ever-increasing share of the parental functions, so that hardly a session of the Legislature goes by without the passage of laws intended to protect children from the ignorance and greed of parents and adults in general. The present month, for example, is witnessing the administration of a new law, by virtue of which employers are forbidden to hire school-children during vacation time, unless a certificate of the child's health is forthcoming. We cannot foresee the future attitude of the State toward the practice of "Christian Scientists" upon adults, but we do not believe that public opinion will long permit them to trifle with the lives of little children. A sick child has an inherent right to the benefit of the judgment of those most experienced in dealing with the actualities of disease, and we believe that laws will soon be passed which will protect children up to a certain age of consent, from the criminal neglect of parents, and the inhumanity of "Scientists."

Rapidity and Certainty in Diagnosis

As medicine becomes more and more identified with the progress of the sciences, the multiplication of diagnostic resources tend—through the delay, annoyance and expense inseparable from their application—somewhat against the popularity of the profession in the minds of the laity, for the more highly civilized a man becomes, the more he is disposed to feel repugnance towards the ever-increasing ordeal of handling and testing, measuring and photographing, which he must undergo before he can obtain and act upon the advice of the conscientious practitioner. His mind may approve the necessity of these diagnostic resources, but his emotional side rebels against them. The pediatrist will be a greater sufferer from this *embarass de riches* of diagnosis than will the general practitioner, because the simplest physical examination of a young child is usually attended with difficulty enough. Under these circumstances it behooves the practitioner to spare no pains in the direction of developing the double discipline of rapidity and certainty in diagnosis. The eager haste which was shown by the profession to adopt the use of the centrifuge, radiography and similar recent innovations, which make for rapidity and certainty, constitutes the best evidence that medical men ought to concentrate all their energies upon anything which promises ultimate success in these directions, to the end that all tedious, burdensome and fallible procedures should be weeded out of routine diagnosis. Every medical association which meets regularly, should request periodical reports from a committee upon the progress of our knowledge in rapidity and certainty of diagnosis. Especially do we suggest that prize committees offer more awards for discoveries relating to actual improvements in diagnostic technique.

Cocainization of the Spinal Cord

The remarkable development of our resources for the production of anæsthesia by various new substances and new methods of exhibition, appears to have found a fitting climax in the lately published experiments of Prof. Bier upon the anæsthetic action of cocaine when injected into the cerebro-spinal sac, the injection being made under conditions similar to those required by Quincke's exploratory puncture. This method, first suggested, we believe, by an American physician, appears to be able to abolish general and tactile sensibility below the level of the nipples, while consciousness is fully retained. The amount of cocaine required is extremely small, being from one-sixth to one-fourth of a grain at the most, and doubtless the future will show that even a twelfth of a grain will suffice for operations requiring considerable time and degree of interference. Anæsthesia is complete in about twenty minutes after administration, and persists for at least three-quarters of an hour. Safety appears to be absolute, although an unpleasant reaction follows the anæsthesia in some patients. The pediatrist will be interested to learn that most of Prof. Bier's cases were children and adolescents. The operations were performed for tuberculous bone and joint-disease in the lower extremities.

Universality of Glandular Tuberculosis in Children

The old German army surgeon who expressed to the distinguished Niemeyer his belief that all people have a touch of tuberculosis, would have good company if he were living today. Volland, who examined 2,500 school children, found that between the ages of seven and nine years no less than 96 per cent. had indolent, multiple, engorged cervical glands, which phenomenon he holds to be a pure tuberculous manifestation. This percentage becomes rapidly less with each succeeding year, until in adult life the number of individuals who present the phenomenon is comparatively small. In other words, the vast majority of children suffer during one period of their lives with a form of tuberculosis essentially benign and self-limited. Blos, of Heidelberg, on the strength of these findings of Volland and others, scouts at the idea of the diffusion of tuberculosis by inhaling infected air and drinking infected milk, and returns to the old view that gland scrofula almost always precedes phthisis; so that one who develops consumption is self-infected from his own tissues. At the recent Congress of Tuberculosis, at Berlin, several distinguished pediatrists agreed that the most direct and certain method of arresting the spread of tuberculosis, was to treat scrofulous children in seaside sanatoria; whence we infer that they hold views akin to those of Blos and Volland. If practically all children have gland scrofula in a more or less benign form, it is a simple and most natural hypothesis that the weaker among them suffer later from pulmonary tuberculosis from auto-infection. We suggest that the profession set about confirming or denying Volland's alleged discovery without delay, by investigation of the cervical glands, in connection with autopsies upon children.

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SOCIETY REPORTS

AMERICAN MEDICAL ASSOCIATION—SECTION ON DISEASES OF CHILDREN.

First Day, June 6th, 1899.

HENRY E. TULEY, M.D., of Louisville, Chairman.

Progress in Pediatrics.—Dr. HENRY E. TULEY, of Louisville, Ky., the chairman, took this as the topic for the annual address. As an example of the progress being made in the teaching of pediatrics, he spoke of the recent endowment of a ward in Roosevelt Hospital, to be known as the "Jacobi Ward," which was to be devoted to the teaching of the specialty by the pioneer instructor, in whose honor it is named.

Regarding the feeding of infants, a subject ever present in the mind of the pediatrician, the speaker said that it was pleasant to note the growing unanimity of opinion regarding cow's milk as the basis of all artificial feeding for infants. He was convinced that the milk laboratory had come to stay; nevertheless he recognized the natural restrictions of such a method of providing milk for the infant, and consequently indorsed the home modification for milk, where modification in the laboratory was inapplicable. For home modification he recommended Dr. W. L. Baney's simple method.

Dr. Tuley also spoke of the modern treatment of lobar pneumonia. Regarding external applications to the chest, he stated that his experience with the application of ice had been so far favorable.

He called attention to the reports of cases in which the Credé method of instilling nitrate of silver solution into the eyes of the newly-born, with the view to preventing ophthalmia neonatorum, had been followed with severe conjunctivitis, and expressed the hope that protargol and argol would prove safer substitutes for the nitrate of silver.

The Death-Dealing Long-Tube Nursing Bottle.—Dr. ERNEST WENDE, of Buffalo, under this rather startling caption described his investigation into the structure of these tubes.

He showed by photomicrographs and the results of chemical and bacteriological research, that these tubes were full of seams and pits, which afforded excellent breeding places for germs.

Constipation in Infants.—Dr. H. M. McClanahan, of Omaha, read a paper on this subject. In infants at the breast, troubled with constipation, the cause has usually been an excess of casein in the milk. There were, however, cases of what Dr. Jacobi called "anatomical constipation," in which the condition was dependent upon the abnormal length of the sigmoid flexure. Here the diagnosis was made by exclusion. A most important diagnostic point was that the constipation was present from the very birth of the child, and unlike the other varieties was not influenced by the most skillful modification of food. If the stools of an infant were light colored and dry, the quantity of casein should be diminished, and the quantity of fat increased. It was often well to administer to these children a little phosphate of soda, flavored with orange juice, or, if there was much mucus in the stools, to give the resin of podophyllin, in doses of 1/40th to 1/25th of a grain. Massage of the abdomen was exceedingly useful. In the cases of anatomical constipation, it was often necessary to use enemas for a long time. These were preferably given by means of a Lisle thread catheter passed through a cork, and introduced into the rectum a distance of two inches.

Dr. C. C. Slagle, of Minneapolis, said that constipation in infants was often brought about by the prevailing habit of dosing them with paregoric and all sorts of carminative teas, all of which were astringent.

Dr. Lawrence, of Massachusetts, spoke of the importance of securing regularity in the matter of moving the bowels. In order to get the child accustomed to have an evacuation at the same time each day, it was often well to insert an oil-paper suppository at first. Where constipation alternated with diarrhea, it would usually be found that the food contained an excess of proteids. The great point was to see that the food contained a sufficient proportion of fat.

Dr. J. A. Work, of Elkhart, Ind., pointed out the harm done by tight clothing in the way of interfering with natural intestinal peristalsis.

Dr. E. D. CHESEBORO, of Providence, said that he had found in practice more satisfaction from increasing the fat in the infant's food, as a means of relieving constipation, than from any other measure.

Dr. HARRIET E. GARRISON called to mind the important part played by water in the system, but said that in order to insure the elimination of the greater part of the water by the bowel, instead of by the kidneys, some alkaline carbonate, such as carbonate of soda, should be added to the water.

Dr. R. C. MOORE, of Omaha, said that the success of the original formula for infant feeding, devised by Dr. Meigs, of Philadelphia, had been dependent largely upon the fact that the quantity of fat was increased by the addition of cream. He recommended using orange juice where the stools were white and lumpy.

Dr. LEONARD, of Massachusetts, said that by properly regulating the intervals between the feedings, and the quality of the food, he had never found it necessary to use drugs for the relief of constipation. He used to recommend an interval of three hours between the meals, but he was not disposed to believe that even this was too short.

So-Called Congenital Obliteration of the Bile-Ducts.—Dr. FRANK X. WALLS, of Chicago, read this paper. He pointed out that the ducts must be patent in these cases at birth, for it was rare for jaundice to supervene for a week or two, and that the existence of a congenital malformation of the bile-ducts remained yet to be proved. His own opinion was that these cases were examples of catarrhal gastro-duodenitis.

Some Thoughts on Physiologic Elimination in all Pathologic Conditions.—Dr. J. A. WORK, of Elkhart, Ind., presented in this paper some reflections on the part played in physiological elimination in zymotic diseases and in their management.

Infantile Diseases from the Standpoint of Biology.—

Dr. Joseph Clements, of Kansas City, presented in this communication some general considerations relative to the part played by the unit of protoplasm, the cell in the organism, and the bearing of cell nutrition on the occurrence of disease.

Second Day—June 7th.

Hysteria in Children.—Dr. Ed. E. Mayer, of Pittsburg, read this paper. He spoke of the effect of home training and environment upon the production of hysteria in the young, and pointed out that camp-meetings and spiritualistic seances were particularly fertile sources of this disorder. In children, he said, the usual hysterical stigmata were wanting, thus making the diagnosis particularly difficult. It should be remembered that these children are apt to be egotistical, precocious, and emotional. These little patients often exhibited forms of hysterical palsy, or were the subject of hysterical suffering. Successful treatment required the removal of the patient to entirely different surroundings, and a complete change in the mode of living.

Dr. C. G. Slagle did not think idiopathic hysteria was at all common in children of six or eight years of age. The best treatment for hysteria, in his opinion, was hypnotism. He directed attention to the fact that hysteria might be induced or kept up by the administration of strychnine—a matter that was overlooked, even by experienced physicians.

Dr. G. M. Blech described a case of hysterical aphasia that he had recently treated.

Dr. Garrison said that in her locality hysteria did not seem to be particularly common among children. She, too, had observed hysterical convulsions which had been precipitated and kept up by taking strychnine. If parents subjected their children from the outset to proper discipline and control, she thought there would be very little hysteria.

Dr. Mayer, in closing the discussion, took issue with Dr. Slagle regarding hypnotism as a mode of treatment. He exp essed his firm conviction that it was the worst form of treatment, and added that, even in Paris, the home of hypnotism, it was fast losing ground.

Infantile Convulsions; Their Cause, Nature, and Treatment.—Dr. C. G. SLAGLE, of Minneapolis, read a paper with this title, in which he gave a general classification of these cases according to their etiology. He said that in probably over 50 per cent. of all cases of convulsions improper feeding was the exciting cause. He could hardly recall an instance in which the convulsion had seemed to be directly attributable to dentition, but he admitted that this was a possible cause.

Dr. A. C. COTTON, of Chicago, spoke of the marked changes in the composition of breast-milk brought about by mental, climatic, thermic, and other influences, and stated that he had good reasons for believing that excessive or unusual sexual intercourse was often responsible for such profound changes in the mother's milk as to excite convulsions in the nursling.

Dr. KIMBALL said that he had found gelsemium an exceedingly valuable remedy for the control of the convulsion, pending the action of other measures directed more particularly at the underlying cause.

Dr. EWING, of Salt Lake City, said that his experience had been such as to lead him to make it a rule to examine for preputial adhesions in every case of convulsions occurring in boys.

Dr. SLAGLE, in closing, said the best of all methods for controlling the spasm was by the inhalation of chloroform. Where the convulsion was evidently due to the recent ingestion of improper food, an emetic was indicated. He had found enemas of salt water as useful as those containing bromides. They acted not only by evacuating the bowel, but by their revulsive effect. He would admit that preputial adhesion might be a contributory cause, but he hardly thought it was an exciting cause.

Comparative Therapeutic Value of Recent Antiseptics in Pediatric Practice.—Dr. GUSTAVUS M. BLECH, of Chicago, considered in this paper some of the newer antiseptics, such as nosophen, guaiacol, and eudoxin. Nosophen he recommended as an exceedingly efficient, and, withal, a non-irritating antiseptic for use in the nasal passages. Eudoxin was a most valuable remedy in diarrhea. By the action of the gastric juice stable salts of bismuth were formed, and the contained nosophen passed unchanged. He recalled two cases of typhoid fever in which, by the administration of eudoxin, the stools had been sterilized in the course of three days.

Dr. SLAGLE said that of all the numerous internal antiseptics, he placed reliance on only three, which had stood the test of time, viz.: calomel, sulphur, and sulphite of soda.

Dr. COTTON placed calomel at the head of the list of intestinal antiseptics. He had found liquid guaiacol a useful application to the tonsils, and prized guaiacol carbonate for internal use. Eudoxin had acted so well that he proposed to use it still more extensively this Summer.

Treatment of Septic Conditions in Children.—Dr. EDWIN ROSENTHAL, of Philadelphia, in this paper entered a strong plea for the more general use of anti-streptococcic serum in these various septic conditions. He asserted that it had been demonstrated to be harmless in almost any dose, and that it was useful in both a prophylactic and a curative way. As an immunizing agent it was especially valuable in those cases about to be subjected to operations about the mouth—operations which, under ordinary circumstances, were notoriously apt to be followed by sepsis.

Dr. DILLON BROWN, of New York, said that he was greatly astonished to find that the reader of the paper had so much confidence in the anti-streptococcic serum. It did not seem to him possible that any serum could be of benefit in this class of cases, for here there was a type of disease characterized by a mixed toxemia; there was not only a toxic poisoning, due to the toxins of the streptococci, but the streptococci themselves were in the blood. Under such conditions it seemed to him impossible to cure streptococcus infections by serum therapy.

Drs. BLECH, ENGELMAN, and COTTON came to the support of Dr. Rosenthal, declaring that there was sufficient to warrant every physician in giving this serum a trial in all appropriate cases.

Membranous Tonsillitis and Pharyngitis of Influenza.—Dr. **Rosa Engelman**, of Chicago, read a paper on this subject and reported a number of cases in which, although the grip bacillus had been present, the membranous exudation in the throat could not be differentiated clinically from diphtheria.

Dr. **Rosenthal** said that he had also seen such cases, but had been able to distinguish them from diphtheria by the granular appearance of the exudate.

Dr. **Engelman**, in closing, said that many of the differences of opinion occurring among bacteriologists regarding the diagnosis of diphtheria arose from looking at the cultures at different stages.

The Semeiology of the Attitude and Motor State in Children.—Dr. S. W. **Kelley**, of Cleveland, read a paper with this title. Speaking of differentiating between the spasmodic cough, associated with enlargement of the bronchial nodes, and the cough of pertussis, he said that in the former there was an entire absence of that peculiar condition of dread which was so marked in whooping-cough just beyond a paroxysm. When a child lay persistently on one side, there was reason to suspect pneumonia or pleurisy, although when there was a large pleuritic effusion the dorsal decubitus was apt to be preferred. Lying with the head turned to the wall indicated photophobia, which might have been due to a conjunctivitis or to a meningitis.

Third Day—June 8th.

Septic Conditions in Some Acute Disorders of Children.—Dr. A. C. **Cotton**, of Chicago, in a paper with this title, made some interesting suggestions regarding these disorders, and particularly as to the need for a radical reform in our nomenclature. Those who discussed the paper agreed with him that such a reform was demanded, but counseled "going slowly" lest the object be frustrated.

The La Grippe Exanthemata.—Dr. **Harriet E. Garri-**

SON, of Dickson, Ill., read a paper with this title, in which she described a peculiar epidemic of la grippe associated with the occurrence of rashes resembling scarlet fever, measles, and German measles. In still other cases there had been an itching papular eruption. She looked upon these cutaneous manifestations as sequelæ of la grippe.

Dr. SLAGLE thought some of the rashes might be explained by the giving of acetanilid, but undoubtedly there had been an epidemic of German measles coincident with la grippe.

Dr. I. N. LOVE, of St. Louis, said that he had witnessed a somewhat similar epidemic in his city during the past season. In many of the cases of German measles the bacteriological examination had demonstrated the presence of the Pfeiffer bacillus.

Dr. GARRISON said that in the cases in which she had used acetanilid most freely there had been a complete absence of these eruptions.

Treatment of Scarlet Fever.—Dr. R. B. GILBERT, of Louisville, Ky., sent a communication on this subject which, in his absence, was read by Dr. SOLOMON. He advised the use of inunctions to limit the contagion, soothe the child, and reduce the temperature. He had found the coal-tar antipyretics too depressing, and baths too apt to cause fright and shock. The nasal passages and throat should be sprayed with equal parts of lime water and peroxide of hydrogen. Not only should the patient be isolated in a room free from unnecessary drapery and furniture, but dogs and cats should be rigidly excluded. Clothing and bedding should be disinfected by boiling or exposure for a few hours to live steam.

Dr. QUAYLE, of Madison, Ohio, advocated the use of carbolized inunctions, the avoidance of antipyretic drugs, and the use of lithia water, and flushings of the bowel with warm water.

Dr. SLAGLE objected to the use of quinine, iron, and antipyretic drugs in scarlatina. The child should be given cold water, cold lemonade, cold enemata, and cold packs—just the reverse of the treatment for measles.

Dr. H. E. Garrison said that for eight years she had used acetanilid quite freely in the treatment of scarlatina and with the very best results, so that now she did not expect unpleasant sequelæ or complications. The unpleasant effect from this drug has been a diminution of the secretion from the kidneys, but even this had been entirely avoided by prescribing a little bicarbonate of sodium with the acetanilid. There had been many severe cases of scarlatina subjected to this treatment with equally good results.

Dr. Solomon said that acetanilid relieved the headache and joint pains. When there was high arterial tension he gave antipyrine in small doses, without the slightest hesitancy. He thought cold baths tended to increase the liability to renal congestion.

Thyroids in Juvenile Obesity.—Dr. I. N. Love, of St Louis, presented a brief communication on this subject. He said that the profession was only just beginning to learn the important part played by the ductless glands in the process of tissue building. He had treated half a dozen cases of juvenile obesity by the use of thyroid extract, and with more or less success in all. Of course, general attention to exercise, diet, and general hygiene had been an important aid. As the thyroid sometimes caused a good deal of cardiac depression, he had adopted the plan of combining it with strychnine in doses of $\frac{1}{150}$ to $\frac{1}{60}$ of a grain, and believed this was a very distinct advance in the treatment.

Dr. Cotton said that he had treated three adult cases for obesity by the use of thyroid extract, but two of these individuals had complained greatly of headache as soon as he had attempted to push the dose to 10 grains three times daily.

Dr. Love replied that this headache was one of the unpleasant effects of pushing the remedy.

OFFICERS FOR THE ENSUING YEAR.

Chairman, Dr. Edward Rosenthal, of Philadelphia.
Secretary, Dr. Louis Fischer, of New York.

PRACTICAL NOTES

Comby, in presenting a 5-year-old girl to the Société médicale des hôpitaux, at its session, July 8, 1898, spoke of the danger of **Carbolic Acid Poisoning in Children.** The patient had been treated for ten days for an otorrhea, by syringeing the ears with a 1½ per cent. luke-warm watery solution of carbolic acid, and the instillation of a 5 per cent. solution in glycerin. Two days after discontinuing the carbolic acid irrigations the child began to pass bloody urine, which later took on the color of black coffee. The patient suffered with abundant hematuria for two weeks.—*Therapeutische Monatshefte, 1899, No. 1.*

Contribution to the Treatment of Chorea Infantum.—N. Filatow says that mental rest is of the greatest importance. The patient must not be excited by studying, must leave school even should he lose a year. With this he should have good food, and his sleep should not be disturbed. As a medicine arsenious acid is the most active drug. At first 10 g. of a 1 per cent. solution are diluted with six tablespoonsful of water, and one tablespoonful of this ordered every two hours, and milk should always be drank after it. On the second day 15 g. of this solution are diluted with six tablespoonsful of water; on the third day 20 g., and so forth up to 40 g. on the seventh day. From the eighth day on the doses are diminished in the same progression, so that the duration of treatment covers fourteen days, during which time about 0.35 g. arsenious acid will have been used. The latter drug is better than Fowler's solution, which form is much less well borne. If nausea or diarrhea are also caused by arsenious acid it is omitted for one or two days, and then again administered, beginning with a smaller dose. With this, warm baths, iron, and, where insomnia is present, chloral hydrate is also administered. Frequently a marked gain in weight is noticed (in one case as much as 175 g. pro die).—*Medicinskage obozrjenje, Jan., 1898; Centralb. f. Kinderheilkunde, 1898, iii., 378.*

Remarks on the Treatment of Tetanus by Emulsion

of the Cerebral Substance, Hypodermically Injected.—SCHRAMM, encouraged by the experiments of Wassermann and Takaki, who have demonstrated that the brain substance of warm-blooded animals has an antitoxic action on the poison of tetanus, and based on the favorable course of the cases published by Krokiewiecz, used this emulsion in a case of tetanus in a 9-year-old girl, and obtained a perfect cure in seven days. He employed 10 g. of an antiseptic and filtered emulsion of the cerebral substance of a rabbit. Improvement showed itself already after the first injection; as the condition, however, again became worse, the dose was repeated, after which perfect recovery resulted.—*Przegl. lek.*, *'99.*

A Case of Primary Isolated Diphtheria.—C. KASSEL reports the case of patient, 12 years of age, who suffered with a catarrh for four weeks, and during the two weeks following from occlusion of the left nasal orifice, accompanied by the most excruciating pain in the nose. The nasal vestibule and upper lip are reddened and excoriated, the nasal mucous membrane of the left side swollen in its entirety, reddened and covered with a gray, membranous deposit. Contact even is very painful and causes bleeding: the sense of smell and hearing are normal; no rise of temperature. A bacteriological examination of the secretions shows typical genuine Loeffler's diphtheria bacilli. After the injection of antitoxin, leaving off all other medication, the clinical symptoms were arrested and disappeared. The nasal mucous membrane was subjected to an after-treatment for two weeks with lime water and nosophen when the diphtheria bacilli also disappeared from the secretion.—*Ther. Monatschrift*, *1898.*

A Case of Scorbutus in a child who was fed with milk sterilized in a Soxhlet apparatus, is reported by NETTER to the Société médicale des hôpitaux in its session November 4, 1898. The child had been fed since birth exclusively on milk which had been sterilized in the home in a Soxhlet apparatus. The child had never previously shown disturbances of nutrition, but now presented the classical symptoms of scorbutus. These rapidly disappeared when the sterilized milk was replaced by boiled milk, and the typical treatment of scorbutus was added. Nine-tenths of all cases of scorbutus which have come under

Netter's observation, affected children who had been brought up on substitutes for milk (condensed milk, infant foods). The other tenth includes children who were fed on sterilized milk. —*Semaine Médicale, 1898.*

The Proper Time for Operative Treatment of Adenoid Vegetations.—Hagedorn urges that enlarged pharyngeal tonsils should not be removed for the prevention of troublesome symptoms, but that we should wait until symptoms make their appearance, which of necessity make an operation indispensable. The following indications for the operation of adenoid vegetations are mentioned by him. The time for their removal has arrived when (1) breathing is not perfectly carried on through the nostrils; (2) when throat affections are frequently complained of; (3) when the hearing begins to suffer; (4) when nervous symptoms, as spasmodic cough, enuresis nocturna, headache, aprosexia, make their appearance. The age of the patient, as regards the period of operation, is indifferent; infants at the breast may be operated on as well as older children. Contra-indications are found, as a rule, only in the presence of acute febrile diseases.

Diphtheria and Scarlet Fever.—Marcus describes a case which he thinks worthy of recording, not only on account of the early appearance of scarlatinal diphtheria previous to the occurrence of the exanthem, but also because no antitoxin was used, which might easily have led to the supposition that the exanthem was due to this. The diagnosis of scarlet fever was besides corroborated by the further course of the disease and the copious scaling which resulted.—*Therap. Monatsh., 1898.*

Permanent Mitral Insufficiency Following Diphtheria.—Steffen reports a case relating to a 3-year-old boy, which is the more interesting as permanent heart lesions are extremely seldom found following diphtheria. The author believes that cardiac lesions are formed by the encroachment on the valves of an endocarditis, and thus shrinkage of the former is produced, which results in a true valvular lesion. That this is not more frequently met with is due to the peculiar power of the childish heart, which is able to bear and overcome grave lesions which the adult heart is unable to do.—*Jahrbuch fur Kinderheilk'de, 1898.*

ABSTRACTS

ON INTESTINAL INVAGINATION IN CHILDHOOD.

R. Koch (*Der Kinderärzt, 1899, x 49*) states that invagination or intussusception of a portion of the intestine into another portion, one of the most important and prognostically most serious of occurrences, is not infrequently met with in childhood, and particularly attacks, by preference, children in the first year of life.

An ileocœcal invagination is probably of the most frequent occurrence, namely the ileum with the cœcum into the colon ascendens, the latter may, however, be invaginated into the colon transversum, even reaching sometimes into the colon descendens, so that occasionally the free end of the invagination makes its appearance in the rectum, and may even protrude from the anus.

The mesentery of the intussusceptum is naturally also inverted, and hence a rapidly increasing obstruction to the circulation, and a consecutive bleeding from the invaginated portion of intestine is developed. The symptoms of a violent, partial inflammation, painful distensions, which may be felt in exceptional cases as sausage-shaped tumors through the abdominal walls, soon appear. In its further course, a general peritonitis occurs, and fatal collapse, as a rule, ends the terrible affection after a duration of four to eight days.

Exceptionally we may meet with a spontaneous cure, in that the gangrenous portion of the intestine is thrown off, the continuity of the intestine having been previously assured by adhesions. This is very rarely the case, however, and a stricture of the intestine is always left behind in the affected portion, with its threatened dangers.

As a rule most of these cases, even when the gangrenous portion has been expelled, succumb later on to a general peritonitis, gangrene of the gut, or exhaustion. As regards the diagnosis, which should be made especially early in these cases, there are three prominent symptoms, *constipation*, *vomiting*, *passing of blood from the anus.*

As a rule the disease begins suddenly with pains resembling colic, and the vomiting of the remnants of food, or of mucus and bile, in the beginning the stool is diarrheal, mixed with particles of food; later stubborn constipation occurs, and only slimy masses, and at times pure blood is voided through the anus, accompanied by violent tenesmus.

The abdomen, as a rule, becomes tympanitic and extremely sensitive to pressure on the second day, the children present a haggard aspect, suffer with excruciating thirst, the pulse becomes small, thready, and a noticeably rapid emaciation takes place. Occasionally the invagination may be left in the region of the right iliac fossa, or of the colon transversum, as a sausage-shaped, smooth and movable tumor, especially when no meteoric inflation of the abdomen is yet present. Should the invagination reach as far as the rectum, the intussusception may occasionally be felt by the index finger in the rectum.

As regards treatment, we should avoid purgatives. Above all we may try large enematas of ice cold water, lavage of the stomach, light careful massage of the abdomen, and internally opium. If reposition of the invaginated portion of the intestine does not soon occur, an early laparotomy, which is not a dangerous operation as carried out today, is strongly indicated.

If no inflammatory adhesions have yet formed, the invaginated portion of intestine may generally be withdrawn, and thus the grave symptoms be at once relieved.

If the diagnosis has been made too late, or the operation for other reasons has been postponed too long, adhesions or gangrenous spots have probably already formed on account of the severe venous stasis in the invaginated portion, and a resection of the intestine or other complicated operation will be required, which is usually not well borne by the tender, childish organism, which has already been previously debilitated by the grave disease. According to the statement of various authors, 48 hours may be looked upon as the utmost period in which an operation may yet be successfully undertaken. The following case is from Koch's private practice, where the diagnosis was made early, and a child eight months of age was saved by laparotomy.

On the evening of June 14, 1895, a man came to Koch, from the village of B., with the story that his nephew, a robust boy of eight months, had been suffering with diarrhea for about six days, but was otherwise well. The child had suddenly become worse that evening. It was continually screaming with pain, and had vomited several times. The passages, which were fluid, contained mucous and occasionally blood. From this description Koch took it for granted that the case was one of catarrhal diarrhea, probably of a dysenteric form.

He ordered ice-water to be given in teaspoonful doses, and cold tea containing cognac; also a mixture of muriatic acid with two drops of opium tincture, besides irrigation with a 2 per cent. solution of alum, and a Priessnitz compress over the abdomen.

On the following day he visited the child. According to the relatives, the diarrhea had ceased, but the child had screamed continuously, and frequently vomited a brownish fluid. Koch found the child looking very pale, collapsed, temperature normal, the tongue heavily coated, the abdomen somewhat distended with gas, and very tender to the slightest touch. Palpation of the abdomen revealed a sausage-shaped tumor in the region of the navel, running obliquely across the abdomen, which could be traced from the left hypochondrium downward to the iliac fossa.

During the examination the child passed about one-half a teaspoonful of pure blood by the anus, with much screaming.

As the three cardinal symptoms, constipation, vomiting and the passing of blood from the anus, were now present, the diagnosis of invagination was clear. On passing the index finger into the rectum, the obtuse apex of the intussuscepted gut could be plainly felt. A number of irrigations were carefully made with ice water, and the abdomen carefully kneaded for the possible reduction of the invagination, but without any result. Laparotomy seemed the only choice after this. The inflation of air and lavage of the stomach did not seem indicated to Koch. The child was therefore taken to the surgical clinic in Giessen, and laparotomy performed by Prof. Dr. Poppert, on the evening of June 16th, about 46 hours after the formation of the invagination.

The invagination was easily found, and extended from the middle of the transverse colon down into the rectum. The abdominal cavity contained a large quantity of a reddish-yellow fluid. The peritoneum was greatly congested; no symptoms of purulent peritonitis were, however, present. An attempt to dislodge the invagination by careful traction of the ileum proved unsuccessful, but when the end of the intussusception was at the same time stroked and kneaded, the invaginated intestine could be unfolded; lastly the coccum with the vermiform process came into view; we were therefore dealing with a typical invagination ileocœcalis, in which the valves of Bauhini formed the basis of the invaginated gut. The child rapidly recovered after this, perfect health only being delayed by a continuation for some time of the intestinal catarrh, so that the patient could not be discharged before July 9th. The child has since continued to develop normally.

The fortunate issue of this grave case is another proof of the correctness of the view that every case of invagination which is not readily reduced by therapeutic measures should be at once transmitted to the surgeon, as we can only hope for a favorable issue through an early laparotomy.

ANOTHER CASE OF CONGENITAL OCCLUSION OF THE STOMACH.

H. **Hammer** (*Prager Medicinische Wochenschrift, 1899, xxiv. 25*) states that cases of congenital atresia of the stomach are quite rare. Monti (1897) only found two cases reported in literature (*Leeshaft and De Brugn Kops*), but neglected to mention the case published by Hammer in 1895. This case related to a three-year-old girl, which had been admitted on account of atresia ani. At the autopsy a complete atresia of the stomach was also found, the latter being completely closed toward the duodenum in such a manner that no pathological changes were present at the point of occlusion, the mucous membrane of the stomach smoothly covering this portion, the duodenum at its blind extremity, as well as the neighborhood of the intestine, presenting no pathological changes whatever. The blind end of the duodenum took its origin immediately from the closed, greatly distended stomach, which was filled with a large quantity of curdled milk; the pyloric portion was divided from the rest of the stomach by a shallow furrow, which gave the former the shape of an hour-glass. The configuration and size of the stomach led to the conclusion that the occlusion only took place in the later stage of fetal development, at least at a time when fixation and twisting of the intestine had already occurred, and the formation of the pylorus, with its muscular tissue, had already taken place. Hammer thought at the time that the process perhaps was one of adhesion of the fold of the mucous membrane at the pyloric ring, which also exists under normal conditions, and which goes to form the border of the true stomach towards the intestine. A perfectly analogous case came to the dissecting table, Oct. 8th, 1898, in the body of an eight-day-old girl, who had died at the Brünner Gebäranstalt with symptoms of a catarrhal gastro-enteritis.

The girl was the sixth child of the wife of a locksmith, who was 45 years of age, and was born naturally, after a normal pregnancy. The placenta had to be removed artificially. Only in the first confinement was it necessary to apply the forceps and remove the placenta manually; all the other four births ran a normal course and spohtaneous delivery took place. All the other children are healthy, and no malformations are present in the family.

Attention was drawn to this patient from the first, on account of the frequent vomiting which took place. Soon after birth large quantities of amniotic fluid were thrown up, with distinct acts of vomiting, later also mucus, which occasionally had a reddish, and at last a dark-green tint, resembling that of meconium. Whenever the child took even very small quantities of sterilized or breast-milk, vomiting at once took place. At the same time meconium was daily voided by the anus. Death occurred from increasing debility on the eighth day.

Post-mortem; On opening the abdominal cavity, the large, full stomach, plainly shaped like an hour-glass, was the first object that came to view; it was situated obliquely, and nearly filled up the whole hypochondriac region. The whole intestine was collapsed as far as the rectum, and contracted to the utmost, presenting the aspect of a bird's intestine. In all its segments it presented normal development and distribution. The duodenum ended in a blind extremity in the immediate neighborhood of the stomach. A band, about two mm. in thickness and about four mm. long, took its course from the blind extremity toward the stomach, and became one with the wall of the latter. The occlusion of the stomach, at first sight, seemed to be perfect. Water, which was injected with a syringe into the duodenum, which had been tied at its lower extremity, accumulated in the former, distending it, but did not enter the stomach. If a liquid was injected into the closed gall-bladder, part of it found its way into the duodenum, and thoroughly distended this; it was, however, observed at the same time that on filling the tied duodenum by way of the gall bladder, a gradual leaking of the fluid into the stomach took place at the point which corresponded to the natural position of the pylorus ring. This spot was marked on the mucous membrane of the stomach by a circular, shallow depression, somewhat larger than a lentil. The enlarged stomach presented the shape of an hour-glass, the whole pyloric portion seeming to be divided from the fundus by a shallow furrow. The stomach was filled with yellowish liquid contents, its wall seemed thickened throughont. It was totally closed towards the duodenum, and the locality where the ring of the pylorus should have been was marked by the circular depression already mentioned. The mucous membrane of the stomach was, however, continued over the spot, showing no loss of substance here. After a more minute examination it was found possible, by means of a very fine hog's bristle, to enter the stomach through the thin band, the bristle making its appearance at the external periphery of the circular depression in the mucous membrane of the stomach. The collapsed intestine was filled with bile-colored, slimy matter, masses resembling meconium were largely present even in the lower part of the small intestine and in the large intestine. The liver, spleen, kidneys and genitalia, etc., were normal.

The case now became clear. A very fine communication existed through the short cord between the seemingly totally closed stomach and the blind end of the duodenum; which could be penetrated by a hog's bristle. Thus we were now able to understand how water, which was injected into the sound gall-bladder, after filling the duodenum could flow off by the stomach. The fact, that on directly filling the duodenum, no water entered the stomach, in spite of the demonstrated communication, can only be explained by assuming that the blind extremity was distorted and displaced when the duodenum was directly filled, thus closing the minute opening of the canal. The fluid injected by way of the gall-bladder did not strike the blind end of the duodenum directly, and could not, therefore, readily obstruct the communication by distortion and stretching. The canal between the stomach and intestine, moreover, allowed only a hog's bristle, but not the contents of the stomach to pass; it permitted the passage, however, of bile into the stomach, which was known by the bile-colored contents of the stomach, and by the bile-colored matter vomited during life. This case was also interesting, as showing the kinds of bacteria present in the intestinal contents. Escherich was the first one, as we know, who pointed out that the intestinal contents of the new-born were sterile immediately after birth; also that bacteria made their appearance very soon, which were undoubtedly introduced by the food and the saliva swallowed with it, when they rapidly increased. Popow then demonstrated by means of experiments that food was really the only means by which bacteria enter the intestine in the beginning. Schild, on the other hand, found in his experiments that bacterial vegetations also occurred in the intestine of the new-born, when no food whatever has been taken, which could only be attributed to their entrance by the rectum. These conclusions were based, it is true, on the bacterial contents of the meconium which was found in the rectum, and the question still remained, whether the same method, the migration of the germs by way of the anus applied to the intestinal contents higher up. The case just reported, where a total occlusion between the stomach and the intestine was present, seemed eminently fitted for the solution of this question. An intestinal coil, filled with meconium was therefore doubly ligated 90 c.m. distant from the stomach, removed, under antiseptic precautions, and the contents examined bacteriologically. Numerous colonies of bacterium coli commune were developed. These could only have effected an entrance in this case through the rectum, and as the intestinal loop under consideration about corresponded to the middle portion of the intestine, this experiment clearly demonstrated, that in children, as well as in adults, the whole intestinal canal may possibly be affected with pathogenic germs by way of the anus.

A CONTRIBUTION TO THE ETIOLOGY OF INTESTINAL INVAGINATION.

R. Fischl (*Therapeutische Monatshefte*, 1898, *Nov.*, 619) describes the following case: A few weeks ago he was called early one morning to a girl six days old, who, it was said, had been taken suddenly ill with an intestinal hemorrhage. Fischl did indeed find the diapers greatly soiled with dark-red blood, and small quantities of the latter also passed from the anus. The patient was born at term (both parents healthy), and was perfectly well up to the present time, being nourished by a good wet-nurse, and having a normal digestion (normal movements two or three times in 24 hours). The midwife had administered a clysma to the baby on the preceding evening, for what reason could not be determined, with a rubber ball syringe, whose point was covered a short distance by soft rubber; the hemorrhage followed in the night.

Fischl first suspected melæna, although no vomiting was present. The possibility of a trauma from the syringe was also considered, but an examination of the parts did not support the suspicion, so that a diagnosis was suspended for the present. Fischl ordered cold applications, and internally a half per cent. solution of chloride of iron. The intervals between nursing were also to be prolonged.

On the evening of the same day the condition of the child had not improved, hemorrhage from the anus continuing; its character was, however, modified in such a manner, that it had a lighter color and was plainly mixed with mucus. There had been no stool for 24 hours, the abdomen seemed slightly distended, and a slight sausage-shaped resistance could be made out in the left hypochondrium, corresponding to the course of the descending colon.

By this time Fischl was convinced that he was dealing with an intussusception in the region of the terminal portion of the large intestine. He administered high irrigations of water, glycerin and sweet oil; was, however, unable to force the smallest quantity of liquid beyond the stenosed portion, so that he recommended an operation on the following day, as the invagination had not been reduced. The parents, however, refused their consent.

The secretion coming from the anus gradually lost its bloody character, and became purely mucous, the meteorism steadily increased, the finger when passed into the rectum entered a largely dilated ampulla, and some resistance was encountered at its apex, which descended lower and lower, finally protruding from the anal opening. This proved to be the highly cyanotic intussuscepted gut, whose mucous membrane presented a partial necrosis, and great œdema. During the following days the invaginated colon protruded more and more for a distance of about 10 c.m., and could not be replaced, so that Fischl had it powdered with dermatol, and enveloped in cotton, soaked in a solution of acetate of alum. Death occurred on the seventh day of illness, with the symptoms of a perforation peritonitis. The child was able to nurse within a few hours of death, and never vomited (probably on account of the low position of the intussusception).

Fischl looks upon the clysma as a cause of this invagination, be it that the tube of the instrument used directly pinched up a fold of the intestine, and that this from the force exerted by the injected liquid was pushed lower and lower, or be it that the contents present in the rectum produced it, from the great power with which they were propelled upward. Fischl had always looked upon this instrument as impracticable, and had employed the irrigator in its place.

SARCOMA OF THE KIDNEY IN A CHILD.

Wanitschek (*Prager Medicinische Wochenschrift*, 1898, *No.* 52) relates a case, as follows: The patient is a 6½-year-old girl, who had her left kidney removed for sarcoma 2½ years ago. The mother reports that the patient had been well ever since the operation. It is only within three months that she again discovered an enlargement of the abdomen.

A freely movable tumor, of the size of a child's head, is felt in the left lower region of the abdomen, yielding a partly tympanitic percussion note, in all probability a recurrence of the growth in the lymphatic glands of the mesentery of the colon descendens. The patient is in robust health, the right kidney seemingly does its work well, the urine does not contain any abnormal ingredients.

Sept. 21st, operation. The tumor presented between the two layers of the meso-colon, partly covered by the colon descendens and a few intestinal coils. The latter, as well as the colon are closely adherent to the tumor in some places. The separation of the first was easily accomplished; the loss of substance caused is easily covered by suturing over it the serosa. This was not the case with the portion of colon. In spite of careful dissection, whole layers of the muscularis remain attached to the tumor, and after the latter had been removed, the greatly damaged piece of gut had to be resected. Union was obtained by ring-suture. The peritoneum and abdominal parietes were closed with deep sutures. The operation lasted one hour, and 70 gms. chloroform were used.

The patient did fairly well after the operation. The temperature suddenly rose, however, on the fifth day; the lower lobe of the left lung presents a pneumonic deposit, on the following day the other side also becomes affected. The parts operated on show no section, and heal well.

The lung affection, accompanied by diffuse bronchitis, ran a severe course, and only after it had lasted ten days was improvement manifested. October 15th the temperature again rose; the quantity of urine diminished, containing albumin, much blood, hyaline granular casts, epithelium and blood casts. The symptoms of this acute nephritis increased, and the patient was again in great danger for ten or twelve days. Improvement then occurred; œdema, as well as the pathological ingredients of the urine (excepting a small admixture of blood) disappeared, the appetite returned, strength increased, and the child was returned to its parents on November 8th.

This favorable course is quite notable, especially when we consider the circumstances. The child not only bore a severe intra-abdominal operation twice under chloroform narcosis, on the second occasion, where resection of the intestine was at the same time carried out, only one kidney being present, but it also passed through a grave attack of pneumonia and an hemorrhagic nephritis after the second operation, (the cause of the former could not be determined; it might have been a scarlatina nephritis, a case of scarlet fever being in the same room with the patient; it may also be, however, that the sound kidney, which had so far carried on all its functions normally, was unable to bear the additional work which was imposed on it by the pneumonia, which rendered it susceptible to an injury, perhaps by some toxine). What will, moreover, become of the child? The prognosis, in the light of other cases of the kind, is rather unfavorable.

1. A boy, seven months old, was operated on Jan. 25, 1893, and died one year later from metastases of the liver.
2. A two-year-old boy died three days after the operation.
3. A six-year-old boy died one year later from metastases to the lungs.

Other operators report a like experience. The reason for this is that the tumors are operated on at too late a period; either the parents do not notice their presence early enough, or the physician overlooks the small tumors in a general examination.

CONGENITAL ABSENCE OF THE UROPOIETIC SYSTEM, AND TOTAL ABSENCE OF AMNIOTIC FLUID.

C. Hochsinger (*Wiener Medicinische Presse*, 1899, *xl.* 98) observed this anomaly in a well-developed girl, born at full term, who died half an hour after birth, with gasping attempts at respiration; the usual means employed for resuscitation in asphyxia neonatorium proved perfectly futile. The child also presented a bi-lateral luxation of the hip-joint, and marked bilateral pes equinus, which we know is caused by the absence of amniotic fluid.

As the new-born babe did not present the aspect of asphyxia, but seemed pretty robust, the sudden death seemed strange, and led to an autopsy, which revealed the surprising picture of a complete absence of the whole uropoietic system, kidneys, ureters, bladder. The only indication of this system was a small groove, or rather depression at the site of the external opening of the urethra, which was only a few millimeters in length, having a blind extremity. The adrenals were present. Sexual organs normal. This case is interesting for two reasons. It teaches us in the first instance that the kidneys are not necessary to life, during the whole fetal period, and only become so at the commencement of extra-uterine life, otherwise the fetus could not have been born alive and robust at the end of a normal pregnancy. As the kidneys of the fetus already early in uterine life secrete urine, it would seem that it would succumb to uremia if the excretion of this nitrogenous product of metabolism does not take place. This is, however, not the case. We know that the fetus possesses a metabolism of its own. It has been proved by the number of observations published, where new-born babies carried to term, afflicted with atresia urethra, were born with extraordinarily distended bladders, that at least during the latter fetal months, urine is secreted by the kidneys in appreciable quantities. That this fetal urine contains nitrogenous products of metabolism has also been demonstrated, although these may not be secreted in any large quantity, on account of the slight metabolism going on in the fetus. Nevertheless the question is raised, in the above case at all events, what becomes of these products, and the only explanation is that they passed from the fetal organism by way of the placental circulation, through osmotic changes, to the blood of the mother, and were eliminated with the urine of the latter. The second interesting factor is the total absence of amniotic fluid, which in this case must have been a result of the defection. A perfectly similar condition was present in a case recently published by Hoenes, where also in the absence of the uropoetic system, not a drop of amniotic fluid was present at birth. These two cases teach us, however, that the fetal urine, at least during the later period of pregnancy, is the main source of the amniotic fluid. This is, moreover, also seen in cases where the fetus, with atresia of the urethra, and a bladder filled to the utmost, was born without any amniotic fluid whatever; the amniotic fluid of former fetal periods—its source has not yet been fully determined—must in this case, as well as in the present case, have been swallowed by the fetus or been absorbed; and as no secretion of the uropoietic system occurred later, the main source of the amniotic fluid being absent, a complete absence of amniotic fluid resulted.

AN EARLY SYMPTOM OF MEASLES.

Meunier (*Jour. de med., January 25, 1898*) draws attention to a sign of measles which, under certain conditions, might be of extreme importance. This consists in a marked loss of weight on the part of the child before any other morbid symptoms. This was present in forty-three out of forty-five cases observed, the loss being noticed from the third day of incubation and becoming more marked on the following days, until the appearance of pyrexia and catarrh. It is therefore a sign of the precontagious period of the disease, and is unaccompanied by any other manifestations. It seems to be independent of the age of the patient or of the severity of the subsequent illness. As showing its importance the writer quotes two examples, in one of which a child attended a children's party when actually in the contagious stage. It was possible to ascertain at a very early date, by means of weighing, what other cases arose from the source of infection, and by this means and by careful isolation a considerable outbreak was prevented. The second instance was that of a child admitted into hospital with slight Pott's disease. There was no pyrexia or any other morbid sign, but the child was weighed daily as a matter of routine. The third day after admission it began to lose weight, apparently without reason. After two or three days it was deemed advisable to isolate the case, and in due time a typical measles eruption appeared. It was ascertained afterwards that on the same day the patient came into the hospital it was exposed to contagion from another case of measles. In consequence, the knowledge of the fact and the prompt measures taken, an outbreak of measles was prevented, as no other child in the ward contracted the disease.

CASEIN DIGESTION.

Knoefelmacher (*Wein. Klin. Woch., No. 48, 1898*) has made a series of investigations with regard to the quantitative estimation of the excretion of casein phosphorus in children. He examined the feces in breast-fed children and also those who were fed on cow's milk; in the former the proportion of proteid phosphorus to nitrogen was 1 to 250; in the latter it was 1 to 16. The amount of proteid phosphorus excreted was therefore considerably less in the case of the breast-fed infants than in those fed with cow's milk with regard to the exact combination in which the nitrogen and paracasein found in the feces of children fed on cow's milk, the author says that neither casein nor paracasein is present, but that a body of more elaborate chemical composition is found, termed "pseudonuclein of paracasein." Our knowledge of casein digestion is yet in its infancy. The important point to settle is, how the phosphoric acid salts in the food are utilized in the construction of the phosphorated albuminoid constituents of cells. Nuclein, nucleo-albumen, and casein are present in the food and become more important in adult life. Milk contains a large amount of proteid phosphorus. It would be interesting to know how much proteid phosphorus is excreted in the feces and how much remains in the body.

INTERNATIONAL CONGRESS FOR CHILDHOOD.

An international congress for childhood will be held in Budapest, Hungary, during the latter part of September, 1899. It will continue five days and there will be five sections. The medical section will be presided over by Dr. Janos Bokay. The questions proposed for discussion are:

1.—The hygiene of the infant in the family.

2.—The care of foundlings morally abandoned or paupers.

3.—The care of sick children and those with bodily defects.

4.—Places for play and recreation.

5.—School hygiene.

6.—The hygiene of minor children employed in factories and other establishments.

7.—Alcoholism.

In addition there will be a judicial section, a pedagogic section, a charitable section, and a philanthropic section.

VULVO-VAGINITIS IN CHILDREN.

Vigerani and **Cascarini** (*La Rif Med., November 20 and 30, December 1, 1898*) have examined a comparatively small number of children with a view to the bacteriology of the disease. They find that, clinically, it is often impossible to differentiate between a simple and a gonorrheal vaginitis. In the simple vaginitis it is common to find a diplococcus which microscopically resembles that of Neisser, but does not stand the culture tests. When the Neisser gonococcus was indisputably found it was always after specific contagion, either direct or indirect. In the vagina of healthy children the authors never found the gonococcus.

CHANGES PRODUCED BY GROWTH IN THE INFANTILE UTERUS.

Friedlaender (*Wiener klin. Wochenschr., 1898, xi., 453*) discussed the above at the Geburtshilflich-gynacoilog. Gesellschaft in Vienna (15, 2. '98) in the following manner:

We are able to discriminate several stages in the development of the infantile uterus, in which the growth of the uterus as a whole, as well as that of its individual parts, progress in an uneven manner. In the first quinquennium of life the size of the uterus is not markedly increased, the growth is exclusively carried on by an enlargement of the neck of the uterus, whose relative length at the end of 5 years of age is greatest. The body of the uterus only begins to develop at 6 years of age, the ovaries at the same time showing an increased growth. The maximum of tissue growth in the uterus is only reached near puberty.

In a similar manner as that of the muscular of the uterus, its mucous membrane also changes, which is especially seen in the cervical canal, and that during the first quinquennium, when a surprisingly rapid growth occurs, which by far exceeds that of the muscular tissue. The rapid increase of folds during the period stated is to be looked upon as an expression of this relative rapid increase of the surface of the mucous membrane in the cervical canal. While we are able, during the early months of intrauterine life, to only demonstrate the existence of a median longitudinal furrow—the meeting line of both Müller's tubes—there are grouped around this, long into the later period of extrauterine life, in rapidly increasing numbers, the lateral folds of the plica palmata. The direction of the furrows bounded by the plica, in the lower third of the uterine neck, is in a downward direction, in the upper third; on the other hand they face the inner mouth of the womb, and thus form a system of valves which, in nearly 30 per cent. of the infantile uterus leads to a retention of the secretion of the body of the womb. This retention is seen in the dilatation, more or less, of the uterine cavity, which may lead to rendering perfectly smooth its otherwise corrugated inner wall. The retained secretion within the cavity of womb, on its part, now exerts pressure on the thin edges of the valves, whose margins in places become edematous, through obstruction to the outflowing blood. This obstruction naturally involves the papilla of the mucous membrane which covers the valves especially, and which grow under the repeated edematous recurrence to tuft-like, polypoid formations. The number of these peculiar formations, only seen in the fresh preparation after carefully removing the clinging mucus from the mucous membrane, but then quite distinct, is frequently very large, and then they markedly increase the relative stenosis of the inner os uteri. The equalization of this circulus vitiosus is brought about by the more rapid growth of the body of the uterus, which raises up the upper folds of the cervical canal. When the effects of these folds are done away with, the local edema of the papilla, and with this also every other cause for the retention of the secretion in the body of the uterus ceases. Accordingly this dilatation of the uterine cavity is only found in isolated cases after the sixth year of life. Indication of valve-like formations at the internal os, on the other hand, are not infrequently present even at the age of puberty, which though, they may not influence the slight amount of secretion of the quiescent mucous membrane of the uterus, might easily become an obstruction to the outflow of blood in profuse menstruation, and thus give rise to dysmenorrhea.

PEDIATRICS

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ORIGINAL ARTICLES

MALARIA IN CHILDREN.

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Professor of Diseases of Children in the University of Rio Janeiro,
Corresponding Member of the Paris Academy of Medicine.

Continued from the August 1st issue.

I WILL here remark that very rarely does one find in the children at Rio the opportune moment, advised by Laveran, for examining the blood, that is to say, the moment of the chill. Attempts made in this direction in my laboratory have not furnished us any satisfactory results, although my son, who is in charge of these researches, has had recourse to many experiments for that purpose, repeating those of Laveran and of Romansky. Dr. Hiram Vineberg, of New York, (Practical Points in the Diagnosis and Treatment of Malaria in Children. Transactions American Pediatric Society, New York, p. 159) avows for his part that in fifteen blood examinations of children presenting the more evident symptoms of paludic fever he invariably failed to find the hematozöon, adding at the same time that Dr. James had arrived at the same negative results in his own work. In Europe, Babes obtained positive results in the children of Bucarest (*Rev. expér. de med.*, Paris, 1893) and before him Hochsinger, of Vienna, also claimed to have found the hematozöon in the blood of twenty-four children with malaria, one-half being new-born (Diagnosis of Infantile Malaria, *Wien. med. Presse*, 1891. p. 657). By what means does this germ of paludism penetrate the organism? This is a question which has been much discussed. Without pretending to enter very fully into the matter here, I will say that the facts seem to put it beyond doubt that the disease is conveyed by drinking water, although this has not been made a matter of experimental demonstration. Although the hematozöon has been regarded as the true agent of intoxication, it would for the present be impossible to prove this claim by bacteriological study on account of our present ignorance as to the life of the parasite outside of the body (Laveran). Bignani and Mendini, having submitted healthy individuals to water containing the corpses of mosquitoes which had stung people with paludism, saw a fever of short duration develop, but a blood examination did not result in the discovery of Laveran's hematozöon. These experiments bear upon the new theory advanced by Laveran and others with regard to the means of transmission of the germ in question. Seduced by the hypothesis advanced by Delgado and Finlay, of Havana, that the mosquito is the principal agency of yellow fever in mankind, Laveran sought to apply the same view to malaria. This seemed to him to be more justifiable than that of ærial transmission, which had, besides, been formally contested by other authorities. With regard to the mosquito theory, it has always been observed that they abound in marshy and humid places, where much malaria abounds, while they are scarcely ever found in high and malaria-free localities. The delicacy of the skin of children, much more readily pricked by the mosquito, is held to explain the greater frequency of paludism in the young.

This hypothesis has apparently been positively verified by Manson, of India. According to him the flagella represent the first stage of the parasite's life, and during this period it is carried (like the embryo of the filaria) within the body of the mosquito, which latter is filled with the blood of some victim of paludism; that is to say, they pass through the coats of the insect's stomach and remain within its body, where they undergo a phase of development. When the mosquito dies on the surface of the water or upon its humid soil, the parasite either enters one of the larvæ of a mosquito or remains at liberty.

Ross, of India, caused victims of paludism to be stung by mosquitoes, and detected the transfer of the parasite from the human blood to the stomach of the insect. At the end of twenty minutes the parasite had assumed the spheroidal shape, and at the end of half an hour flagella had appeared. One hour later both the spheroidal and flagellate forms were rare, and in two hours there was nothing to be seen but dead parasites in the spheroid stage.

At my request, my son and assistant, Dr. Moncorvo, sought to demonstrate the presence of the malarial parasite in the body of a mosquito which had stung people affected with the disease. He found a few fragments of round bodies accompanied in some cases by flagella.

From the results of these researches it would seem that we ought to look upon the mosquito as the most common agency in the transmission of the germ of malaria; the insect while in its larval state takes up the parasite from the surface of the water or humid soil and inoculates it into the human organism.

As I have already remarked, although we accept the mosquito as the transmitter of the paludic germ, clinical facts put it beyond doubt that infection also occurs through drinking water.

As long as the digestive functions are normally performed one is generally led to believe that the economy is preserved from the organism more frequently than it is infected by it; the gastric juice usually being equal to the task of the destruction of the parasite. It is, of course, understood that any alteration in the quantity and quality of the gastric juice becomes a predisposing factor in the development of malarial intoxication. I was the first to note (in 1888) the production of gastrectasis in all the periods of infancy (Moncorvo, On the Dilatation of the Stomach in Children; Rio de Janeiro, 1883). My attention was then called to the frequent association of paludic poisoning, with dilatation of the stomach, in young children. The existence of this association has been shown to hold good on a larger scale; and today I am inclined to admit, without much hesitation, that the dyspeptic troubles which precede or follow gastrectasis open the door to infection, or at least help to aggravate it by creating a new port of entry for the parasite. This will find confirmation in the experimental researches which I made in 1889 upon the subject of chemical troubles of digestion in children (Moncorvo, On the Dyspeptic Troubles of Infancy, and on Diagnosis by the Chemical Properties of Gastric Juice. Paris, 1889). I then came to the conclusion that from the time of birth to the end of the second year gastric insufficiency is almost invariably due to the absence of gastric juice.

It is now natural to inquire if the milk of the mother or nurse with malaria could transmit the disease to the nursling, as Boudin, Ebrard, Laranza, Lewis Smith and others have claimed. No one has ever been able to find the malarial parasite in the milk of a mother suffering from malaria, and we must therefore depend upon clinical observation for information on the subject. The majority of authors, including Burdel. Bonchut, Bonfils, Laueran, and Paul Legendre, who have had good opportunities for the study of this problem refuse to admit any relationship between the condition of the milk and the infection of the child. As for myself I must assert that after a long experience with this subject I have been unable to find a single positive fact relating to this form of transmission, and therein I agree with the opinion lately expressed by my distinguished friend, M. Jules Bouvier, who, after ten years' experience with the disease at Beyrout, where it is endemic, is able to state distinctly that he could find no positive evidence of this alleged mode of transmission of the disease by mothers' milk. Perhaps, as I believe, the milk altered by the mother's sickness may be able to occasion some digestive disturbances in the child but never the specific intoxication in question; and the child would run no greater risk through the air which it inspires. We may therefore justly conclude that a woman suffering from malaria could nurse a healthy child without transmitting her disease.

If now we positively refuse to accept the possibility of the transmission of the parasite of malaria by means of the air, we shall be forced to assume that the only mode of infection left to the nursling is through the mosquito, because drinking water is not taken, the body of the nursling and the milk, as we have just seen, is innocuous.

Certainly at Rio the children most affected with paludism live in quarters or suburbs where the mosquito abounds. Ever since I began my researches upon this phase of the subject every little malarial patient seen appears to confirm the mosquito theory. The youngest children, whose skins are so delicate, are naturally less protected against the inoculating stings of the mosquito. Once having in mind the various etiological factors of malaria, we must not overlook that both children and adults may react differently towards the malarial infection, this reaction being moderate in children, especially in the period following birth. But if the patient has any trouble affecting the general health—the simplest cold, bronchitis, etc.—the malarial attack may readily assume a serious form instead of remaining latent, as would otherwise be the case. The predisposition to malaria is much increased by a state of dystrophy. I will first cite an example furnished by inherited syphilis. Of the 573 cases taken from my clinical register there were 209 instances of inherited syphilis, a proportion of 39 per cent. I daily call the attention of my pupils to the fact that the great majority of my little patients who die present evident stigmata of the syphilitic cachexia. That is why I say to them that mercury, a specific for syphilis only, can render no service in combating the malarial poison when combined with syphilis. Another dyscrasia is the tuberculous, which was present in a great number of my malarial cases. The old doctrine of the antagonism of phthisis and intermittent fever, taught by Schoenlein in 1832 and later sustained with the highest conviction by Boudin, was nevertheless soon disputed by Bufalini, Louis, Carswell, Schedel, Hirsch and others, and is neglected today by most clinicians. For my own part I will add that after a long period of observation I have never had an opportunity to confirm this alleged antagonism, and that, quite contrariwise, I have often found the two morbid conditions associated in the same subject and reacting upon each other to a most serious extent. It can no longer be disputed that tuberculosis as well as inherited syphilis greatly augment the susceptibility to tuberculosis in young subjects.

II.

In examining the clinical characters which malaria present in children, I again insist on the fact that at this period of life its manifestations offer very little resemblance to those observed at other ages. This modification of the clinical character becomes still more noteworthy when the affected subjects are very near the time of birth, the disease then taking such a different physiognomy and following such an irregular course, that the inexperienced practitioner will find its recognition very difficult. It is necessary, however, that one should be very familiar with this phase of the disease, for the least delay, the least hesitation, in the presence of a case of this sort involves very often a fatal consequence, which might have been avoided if a specific treatment of proportionate activity had been resorted to at the very beginning of the attack. This special *cachet* which distinguishes malaria in infancy has invariably attracted the attention of clinicians, who at various epochs and in different countries have devoted themselves to the study of this disease. In 1847, Semanas, after a long stay in Algiers, affirmed that there is but little resemblance between the symptoms of pernicious fever in adults and those of the same disease as observed in children, and especially the very young. In his treatise on the symptomatology of malarial fevers Steiner declares that according to his personal experience the younger the children, the more irregular are the attacks as regards the course, etc. Bouchut, Bohn, Oppenheimer, Jules Simon, and others who have had equal opportunities for the study of malaria in children in Europe, arrive at almost the same conclusions. In a recent work by M. Jules Bouvier, of Beyrout, who practiced in a country the pathology of which is like our own (Brazil), wrote as follows after ten years' clinical observation: "Almost always the attacks are unnatural in their type, and are notably unlike the classical type"—adding that diagnosis of these cases is often very difficult. Meigs and Pepper, Lewis Smith, Vineberg and other American pediatrists have also observed the atypical course of malaria in young children. The invasion of the disease occurs in such an insidious way that the parents and others who are about the children do not have their attention especially attracted, and in the majority of cases overlook troubles of great importance. In other instances the symptoms are entirely overlooked, and it is with the greatest astonishment that we see the severe manifestations of the disease which announce its pernicious character and often precede a fatal termination.

As a rule, however, things come to pass about as follows: A child enjoys a more or less flourishing state of health until a certain period, when its mental and physical condition undergoes a more or less notable change. A modification of character is first noted, the child becoming restless, moaning, nursing often and greedily, and having great thirst. Its nights are poorly passed, sleep frequently interrupted, movements restless—the body is turned from one side to the other, the arms are moved, crying and groaning are heard. If the child is examined, it is found to be in a state of profuse perspiration, sometimes universal, and sometimes confined to the head and neck. Next day it awakens tired, pale, cross, and with dullness of the eyes. In the course of the day the child appears to be well again, regains its gaiety, nurses less frequently, or if weaned, refuses some of its nourishment. The urinary secretion is diminished, while the alvine dejections are much increased in frequency, the aspect and color being in the meantime much changed—acid, greenish, or diversified in color, and accompanied by colic and meteorism. His pallor becomes more marked, and he becomes progressively thin. The disease often remains stationary for some days or weeks. It is necessary to know that this departure from health is often ascribed to the most ordinary causes—to the food, which may be irreproachable, to the influence of teething or worms. In children at the breast I many times have known the mother's milk to be blamed for the disease and the children to be weaned prematurely; this change of nourishment, however, does but aggravate the disease by lessening the resistance of the patient.

Weaning, nevertheless, seems to succeed in some cases, but this is not the rule, and so one sees the disease develop; the attacks of fever—which, until they occur regularly in the night pass unobserved by the eyes of the parents, and even of the practitioner unversed in such affections—acquire then a great prominence by reason of the marked elevation of temperature, with the addition of other symptoms which cannot be overlooked. These attacks, which under certain rare circumstances may constitute the initial manifestations of paludism, in little children present very peculiar symptoms, which are worthy of being chronicled. The type is almost invariably the quotidian, very rarely the tertian, and never the quartan. The quotidian type, however, is very far from taking the classic course as observed in the adult age. The temperature curve is very irregular, or we may say that it is definite, but of a remittent character, and varies in such a manner that the maximum and minimum never correspond from day to day. This irregularity causes me to say that malarial fever in little children is so abnormally disposed that its evolution might be termed *anarchistic*. Aside from the rhythm, we must also note the peculiar constitution of the attacks, which seldom present the three characteristic features of the disease in adults: the shivering, extremely rare in infants, is replaced by the coldness of the extremities, and the pallor of the face accompanied often by cyanosis of the lips and nails. This peripheral hypothermia is followed almost immediately by a rise of temperature, soon succeeded by a general or partial sweating. This phase of the process may be incomplete, and the fever may often be the sole manifestation; but as a rule the temperature does not fall quite to the normal, so that the frankly intermittent type of fever is exceptional. A European observer, Steiner, had already demonstrated this fact, as is shown in the following citation: "As for the attack itself, the fever does not always entirely abate during the period of apyrexia, which latter should be characteristic of the fever." We must recognize a great resemblance between the characteristic features of the malarial attacks observed at Rio and those which occur in the children of the Old World, despite the climatological differences of the two countries. It is evident that malarial infection, when acute, usually pursues in children (especially the youngest) are mittent and highly irregular type, presenting very little analogy with the form one is accustomed to observe in adults or even in children of the higher ages. The course of the disease is at times so irregular the maximum temperature is so little elevated that the febrile evolution may be readily masked in a superficial examination. These imperfect types are worthy of the name of *defaced* applied by Bohn, who has observed these cases in Germany. Digestive disturbances play a remarkable rôle among the symptoms which characterize the disease. It is by no means rare to see these symptoms precede the febrile attacks, masking the clinical picture to such an extent that one is tempted to see but a simple gastric embarassment, or perhaps an enteritis due to ordinary causes, especially to faulty diet. I have on many occasions seen such a state of affairs imputed to the state of the milk of the mother or nurse, the actual cause of the disease being quite overlooked. My own cases, in which the diet was recorded, are as follows:

	1891.	1892.	Total.
Nursed by mothers	79	104	183
Artificial food	54	49	103
Mixed aliment	53	16	69

It appears, therefore, that nearly half of my cases were children whose diet could not be incriminated. For this reason I often tell my students that we must always suspect malaria in children who have gastro-intestinal troubles, despite proper diet. If the disease is not promptly arrested the appetite is lost, the thirst augments, the tongue is coated, the abdomen is more or less swollen, and the evacuations become flocculent, greenish or serous, and very irregular in sequence. They may be regular for a time and then suddenly become diarrheal, returning later to normal periodicity. This unexpected spontaneous return of the bowels to the normal regularity and condition lead to the belief that the digestive organs, temporarily at fault, have resumed their natural habit; but a few hours later we observe the reappearance of thin, slimy, or otherwise altered stools. This behavior of the bowels in young children with malaria is so characteristic that it should be emphasized in descriptions of the disease. In older children the diarrhea is more apt to assume the form of a dysentery; the stools are muco-purulent, more or less mixed with blood, and followed at times by marked tenesmus. When such evacuations coincide with a marked rise of temperature the breath has a peculiar odor like chloroform, perceived at a distance. The liver and spleen are more often enlarged, as one would expect to find in a general infection. The two intestines are augmented in volume, or perhaps only one is tumefied, while the other remains normal. In Rio we usually find the liver more enlarged than the spleen. I must here emphasize the difficulty which abdominal exploration presents in very young children.

Dauchez, who has devoted himself to the interesting subject of the relative size of the liver in healthy and diseased children at various ages, justly observes that the exact recognition of the dimensions of this organ in the child is difficult on account of the involuntary contraction of the abdominal muscles, of the percussion sound of the inferior margin of the liver and of the obliquity of the upper border. He has been able to show that the anterior aspect of the liver is almost always one or two inches lower in life than in the cadaver after opening the abdomen (Rev. mens. d. mal. de l'enfance, 1892). It will therefore be understood why so many mistakes may be made by those unfamiliar with the true topographical anatomy of the liver, and this source of error is greatly aggravated by the resistance and cries of the little patients. Since percussion must be uncertain in the great majority of cases, I advise palpation of the lower aspect of the organ, following to some extent the method of procedure recommended by Glénard in adults. These uncertainties in the estimation of the dimensions of the liver disappear, however, when the normal limit is much exceeded, for then mere touch permits the recognition of the increased volume. It is not rare to find the lower border of the liver as far down as the level of the anterior superior spine of the ileum. As the liver enlarges it becomes more painful to the touch; this abnormal sensibility, expressed by the screams and cries of the little patients, enlightens us considerably in arriving at a diagnosis. Most of the authors who have especially studied malaria in infants seem to attach a greater degree of importance to splenomegaly; but for my part I must repeat what has already been published in my personal works or in the theses of some of my pupils (Malaria in Children, by Moncorvo—Transactions Internat. Congr., Washington, 1887. Impaludism in Children, Inaugural Thesis, A. Barreto, Rio de Janeiro, 1884—*Ibid.* J. Rodriques, Rio, 1884). Hypertrophy of the spleen is absent in many cases of infantile malaria, despite the belief of Steiner that it is invariably present. Lewis Smith often found enlarged spleen, but not invariably. Meigs and Pepper believe this hypertrophy to be very common in severe cases. Holt, another American clinician, lately remarked at a meeting of the American Pediatric Society that he had observed a certain number of cases of malaria in children cured by quinine, in whom the spleen did not appear to have been enlarged as far as could be determined by percussion. At the same meeting Fruitnight added that since splenic tumefaction is a periodically occurring phenomenon, it could not be used as pathognomonic sign. Jeffries related a case of malaria, complicated by convulsions and cured by quinine, in which the spleen did not appear to be at all enlarged. The diagnosis was confirmed by the discovery of the presence of the plasmodium in the blood. This state of affairs, with regard to the enlargement of the spleen, does not appear to differ materially from that exhibited by the adult as far as may be seen. My lamented friend, Duboué de Pau, whose ability in such matters could not be doubted, had for a long time called the attention of clinicians to the absence of splenomegaly in a hundred cases.

I do not pretend to deny the frequency, nor the value of this symptom of the disease. I also admit that in making examinations in very young children the enlarged spleen may readily be overlooked. Interesting researches recently made by Gaston and Vallet in France (1892) and Ballantyne in Edinburgh (1891) upon the state of the spleen in young children have informed us as to the true situation and dimensions of this viscus at this period of life. It is now well established that during the first years of life the spleen is obliquely situated, so that its long axis is directed from above downward, from within outward and before backward. By reason of its prismatic and quadrangular from it presents a posterior external aspect in relation with the left pillar of the diaphragm and the diaphragmatic insertions which separate it from the 9th, 10th and 11th ribs, and an anterior external aspect corresponding to the great cul-de-sac of the stomach and tail of the pancreas. Its posterior margin is in relation to the lateral aspect of the last dorsal vertebra, its anterior margin being almost in contact with the floating ribs. It is hidden by the stomach, especially when dilated. Its lower extremity is in relation with the left kidney, with the angle formed by the transverse and descending colon. As a result of these relations, it follows that the exploration of the organ in young children must be practiced on a limited zone of the back near the spine, within a line traced from the posterior surface of the axilla to the anterior iliac spine, and between two transverse lines traced, respectively from the nipple and navel to the spinal column. Percussion must be done with some force at the level of the anterior and inferior portions, where an exaggerated tympanism of the stomach and transverse colon may lead to confusion; but I cannot agree with Gaston and Vallet in their claim that palpation should be sufficient to recognize hypertrophy of the spleen. Without denying the value of this latter method of examination, I claim most profitable results from "deep" percussion made very attentively. One must never forget that in the spleen he is dealing with a highly elastic organ which is subject to frequent oscillations of volume which follow the rise and fall of the temperature. More than once has it happened to me that, in appreciating the dimensions of the spleen, an augmentation of volume has followed a slight febrile rise, so that it will be necessary to make repeated explorations if one wishes to be fully informed as to its condition during the progress of the disease.

Returning now to the consideration of the special features of malaria in young children, I mention first the marked tendency of the disease to suddenly become worse and assume a pernicious character. This phenomenon is always to be dreaded, and is sufficiently characteristic to have attracted the attention of other observers. Lewis Smith appears to be correct in stating that pernicious fever attacks the child much more frequently than the adult. Upon this point he writes as follows: "In New York, where the type of malaria is benign, we have never met with a case of pernicious fever in adults but we remember of having seen many cases in children, two of them with a fatal issue." The sequence of the phenomena which constitute perniciousness in children resembles very little the corresponding type of disease in adults. Semanas, in Algiers, expressed the opinion that the disparity in this respect would increase inversely with the age of the child. Whenever it happens, then, that the disease becomes pernicious, either because untreated or because the infection is too severe to be overcome, the accidents of the digestive organs are increased; the tongue becomes dry, with thicker and more adherent coating, the edges being red and exfoliated; the thirst becomes insatiable; the lips are dry and held half open. The child frequently executes the movements of mastication and deglutition with resulting augmentation of the dryness of the buccal mucosa; and nurses with avidity whenever the mother allows it—it is usually held to be evidence of exaggerated appetite. Almost at the same time the stomach becomes intolerant and the vomiting becomes incoercible, all food and medicines given being immediately rejected, while the degree of tympanites increases.

To be continued.

Thyreoidin in the Psychic and Physical Retardation and in Defective Development of Children is recommended most warmly by St. Philippe and Guyot, in the *Annales de Méd. et Chir. Infantiles*, 1898, Nos. 17–18. One of the five cases described by them refers to a child 2½ years old, which only weighed 9 kg. and was unable to talk yet, also to one 22 and another 19 months of age, who, in spite of the greatest care, resembled children of less than one year of age, and two other 3-year-old children, one of whom was unable to walk or to talk, the other being rachitic and backward in walking and teething. All of these cases were extremely favorably influenced in their bodily and mental development by the exhibition of Thyreoidin tablets, beginning with one-third of a tablet *pro die*, which treatment was continued without interruption for months. The initial dose was 0.07 g. of the recent sheep's thyreoid (=one-third of a tablet), later, 0.1 g. and after five or six days 0.2 gr. (=1 tablet) were given, which dose was adhered to with occasional intervals of eight to fourteen days (when excitement was manifested).

Two Cases of Morphine Poisoning in Children.—Hirschberg reports that through a mistake of the druggist two children (each ¾ years of age) were given 0.02 and 0.015 g. of morphine by the mouth. In spite of the large dose and late attendance of the physician (1 hour) both recovered. Treatment consisted in lavage of the stomach, cold douches, black coffee, and clysmata of vinegar.—*Die Heilkunde, Oct., 1898.*

ANKYLOSIS OF THE HIP JOINT.

By Henry Ling Taylor, M.D.,

New York.

MORE or less stiffness at the hip joint is the usual result after the cure of hip disease, and even if the ankylosis is complete, the patient may still walk very well, provided the position of the limb is good. If, however, the thigh be flexed, or adducted, or both, as well as ankylosed, the patient's condition, so far as comfort and locomotion are concerned, is very bad indeed. Unfortunately, ankylosis at the hip joint with deformity is frequently seen as the result of hip disease, though it can, in most cases, be prevented by careful treatment. The figures show the result of forcible correction of this deformity under ether. Fig. 1 shows the leg flexed about 90°, and with only a trace of motion, when I first saw the child, nearly two years after the subsidence of acute symptoms. The patient walked only on crutches. I was prepared to do an osteotomy below the trocanter minor, but under persistent, careful manipulation, the adhesions gave way, and the leg came down into good position, as shown in Fig. 2, taken two years after the operation. The patient walks without support, with but a moderate limp, and has about forty degrees of free motion at the hip.

It is necessary after a Gant's or a forcible correction to hold the leg in the corrected position for six months or a year. For this purpose a spica from the axillæ to the toes of the affected side makes an excellent splint, which may be replaced later by a long hip splint with a thoracic attachment.

When such a deformity cannot be corrected by manipulation, using a reasonable amount of force, a Gant's osteotomy usually gives an excellent result as to position, but one must be satisfied with a stiff joint. By either procedure the effective length of the leg is usually considerably increased.

71 West Fifty-fifth Street.

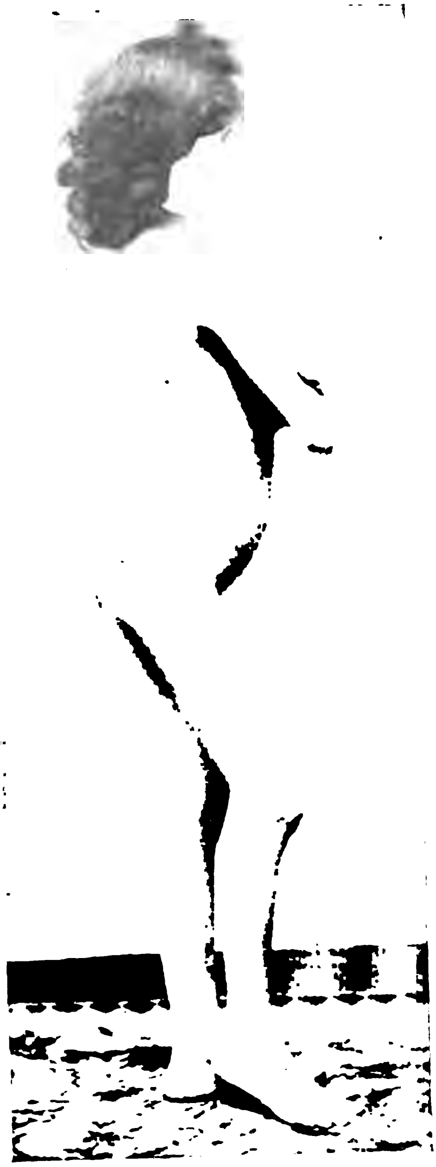


Fig. I.

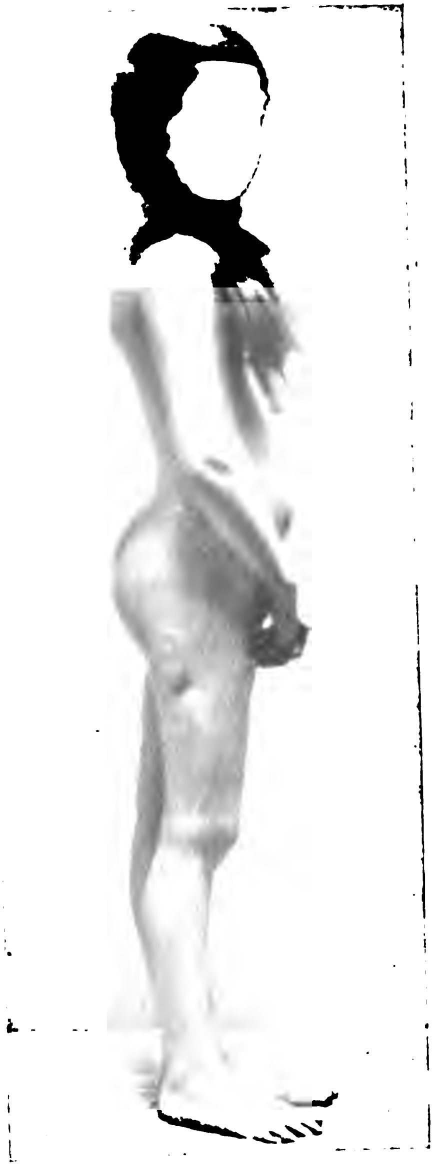


Fig. II.

ANEURISM OF AORTA IN A CHILD.

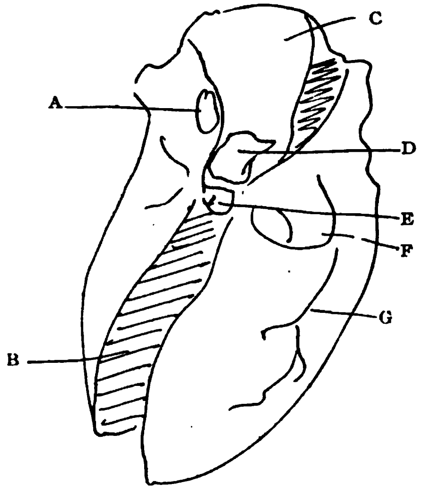
By Bertram Rogers, B.A., M.D., B.C.,
Bristol.
Physician and Pathologist to the Hospital for Sick Children and Women.

BEATRICE G., 10 years 4 months, was admitted under my colleague, Dr. Elliott, on January 17, 1895. Her parents stated she had been ill with heart disease for about six months previously. The family history was good, and no reason could be assigned for the child's illness. There was no history of rheumatic fever, chorea, or scarlatina. On admission she was very anemic, and a loud, rough systolic murmur could be heard all over the cardiac area, being loudest over the pulmonary region. The heart's apex was displaced 1 inch outward, but the notes do not say in which intercostal space it was felt. A very distinct fremitus could be felt where the murmur was loudest. The other organs appeared to be normal.

The progress of the patient differed from any case of ulcerative endocarditis. The temperature was constantly raised, and no drugs seemed to have the slightest effect in reducing it. The murmur increased in loudness, being at times best heard over the aortic and at others over the pulmonary cartilage. The urine was normal, and at no time did any portion of the valves become detached in the blood stream. On April 11th the child died suddenly of cardiac failure. At the post-mortem the following conditions were found: The pericardium contained some fluid, with flakes of recent lymph in it, and there was slight roughening of the visceral pericardium. The left ventricle was greatly hypertrophied, the aortic valves glued together with large vegetations. About half an inch above the right side of the anterior semilunar valve of the aorta was a rugged hole about two-thirds of an inch long, passing upward in the direction of the artery. This was the opening of a small aneurism, which passed forward and appeared between the tip of the right auricle and the pulmonary artery in the auriculo-ventricular groove. The aneurism was about the size of a cob nut, but appeared to be partially filled with clot.

No disease was found in any of the other organs of the body.

Aneurisms in children are extremely rare, and in the majority of cases are associated with disease of the aortic valves. Mr. R. W. Parker showed a specimen at the Royal Medical and Chirurgical Society (*Brit. M. J.*, 1883, *Vol. II.*, *p.* 973) from a boy in which the aneurism was in the external iliac, the aortic valves having vegetations up them. He referred to a table he had prepared of fifteen cases of aneurism in children collected from medical literature, and in eight of them there was disease of the aortic valves, and in only two was the heart reported to be healthy. An interesting discussion followed on the manner in which an embolus—for there is little doubt that the disease follows some detachment of a vegetation—caused the aneurism, and no explanation was forthcoming. It was pointed out that the simple occlusion of an artery by an embolus was not sufficient for such an event, at least as regards the blood flow, differs little from the effects produced by a ligature. To Mr. Parker's list may be added a case reported by Mr. Edgar Willett (Path. Soc. Trans., xlii., 38),



A—Pulmonary artery. B—Hypertrophied valve of left ventricle. C—Aorta open. D—Aneurism. E—Aortic valves. F—Left auricle. G—Left coronary artery.

though the author queries the aneurism. The specimen having been mutilated by careless removal, Mr. Willett's explanation was that the aneurism might have arisen in an only partially obliterated ductus arteriosus, or from the bursting of a caseous mediastinal gland into the aorta. The report does not say that there was any valvular disease, though there was pericarditis.

In my case the possible causes assigned by Mr. Willett would not hold good. The aneurism was not in the situation of the obliterated ductus arteriosus; it was in the pericardium, where there are no glands. Neither did it arise from a coronary artery, being situated above the right one.

The only explanation that one can suggest for this very unusual occurence is, that the wall of the aorta had by some means become infected, and that in consequence of this infection the wall had been weakened and gave way. The condition was not diagnosed or diagnosable during life.

I have to thank Dr. Elliott for permission to publish this case.

On the Action of Thyreoidin Tablets.—A contribution on this subject is made by Dr. Wunderlich in the *Munchener Medicinische Wochenschrift*, 1898, No. 47. A child, 3½ years of age, was ordered thirty tablets, each containing 0.3 g., one-half of these to be taken twice daily, and after three days increased to one at a dose, for a rapidly increasing struma. On the third day of treatment the child possessed itself of the box of tablets and ate twenty-two of them. It remained perfectly healthy and showed no abnormal symptoms whatever. Wunderlich continued to administer the tablets (two a day) and observed a decrease in the tumor, an ointment of iodo-vasogen being applied externally at the same time.

Five Cases of Angina Caused by Pneumococci were observed by A. and V. Vedel. Three cases represented the erythematous form, and the patients recovered in seven to eight days. Two exhibited a pseudo-membranous angina, these patients gave the impression from the beginning of suffering from a severe infection, all therapeutic resources (including antitoxin) were useless. Death took place.—*Montpellier méd.*, 1898, *No.* 29.

INFANT FEEDING.*

By Hugh N. Leavell, M.D.,
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BARRING congenital deformities and predispositions, we begin life with a perfectly healthy organism. The use of proper diet and clothing should maintain us in this healthy condition. The mortality in infants due to artificial feeding may be classified as follows:

1.—Improper diet.
2.—Lack of knowledge of the infant's digestive capacity.
3.—Individual peculiarities of the infant.

It has been often asserted that a disease which has no specific, but includes in its curative list a large number of drugs, is a hard disease to cure. If this be true, infant feeding is manifestly an exceedingly difficult task. The number of artificial foods for infants increases each year. An improper diet for infants is that which does not approximate in chemical and physiological consistence the ideal food—human milk. Human milk contains, normally, 4 per cent. fat, 1.5 per cent. proteid, and 7 per cent. sugar. There is no unmodified milk or food which has exactly this composition. Cow's milk, malted milk, condensed milk all contain too large a per cent. of proteids; all except cow's milk contain too large a per cent. of sugar; they all lack a proper proportion of fat; they comprise a diet list entirely unsuitable for the new-born infant; they should be classed as temporary expedients if used at all; their long continued use will certainly result disastrously.

Every one may be able to cite a case in which an infant has apparently thrived on some one of the artificial foods I have mentioned. My experience is that they are usually fat babies, but they are anemic, flabby, and lack muscular tone and energy.

No infant can well digest starch until pytalin, the active principle of the saliva, is present. This does not appear prior to four or six months. The amylopsin of the pancreatic juice may take care of some of the starch, but it is clearly evident that this material should not be given in large quantity prior to the time when the natural secretions are present for the purpose of digesting it. Nearly all the artificial foods contain starch, soluble and insoluble, in much too large proportion for infant digestion.

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*Read before the Falls City Medical Society, Louisville, Ky.

The stomach in the infant does not possess the same digestive power relatively as the adult. At birth it is seen to be a very slight dilatation of the intestinal tract, the cardiac and pyloric orifices being rather indistinct. Its capacity at birth is about one and one-fifth ounces.

How often do we see the nurse trying to make an infant take two or three ounces? The necessary result must be vomiting, and not always merely the excess but the total quantity which has been ingested, followed by an outcry in a short time for more food, and, if persisted in, an attack of gastritis or enteritis. Vomiting is nature's safety-valve for an over distended stomach; it seems to me a much better policy to moderately fill the organ, since this will be all that can be digested, than to increase the demands on nature by asking her to relieve an over-distension in addition to performing the important function of digestion.

It is this point in infant feeding that leads to complications and renders the proper feeding of infants so difficult. We may modify cow's milk or whatever food which we may decide to give until we feel sure the infant can tolerate it, and be much surprised if it does not. The administration of food in this instance is complicated as in the administration of drugs, by that all-important element, idiosyncracy. It is in these cases the physician, as a student of infant feeding, will find his skill and patience taxed to the utmost. It is this element which makes the sciences of dietetics and therapeutics so uncertain. It is here theory and practice part company. One week we may find a diet agreeing perfectly, the infant gaining in weight; the next week we find all the symptoms of indigestion with its numerous sequelæ. In any given case we can never assert positively that a diet is going to agree with the infant.

A rule which will give good results in the majority of instances is this: It is better to give the elements—

sugar, fat, and proteids—in small percentage, greatly diluted, than to give them in a highly concentrated form.

Cow's milk is the best food to use. It can be easily obtained, and admits of a greater modification to approximate human milk in chemical and physiological consistence than any other diet. It should never be obtained from one cow, as has been advocated in past years. The reasons for this need not be mentioned to a medical society of today. The larger the herd from which the milk is obtained the better. The milk from a herd of Holsteins will need less modification than that from any other breed. The Jersey milk is too rich in fats, and by the time it is modified so that the fats are in proper percentage the other elements are reduced too much for a suitable diet.

The proteids, if in excess, will cause more trouble than the other two elements—fat and sugar. An excess of proteids or indigestion of proteids will be indicated by the presence of curds in the stools, colic, and, oftentimes, regurgitation of small quantities of food. Constipation or diarrhea may be present; most frequently constipation. An excess of fats will be followed by diarrhea, and lumps resembling casein will be present. If these lumps are soluble in ether, it shows them to be composed of fat. An excess of sugar will be followed by thin, green, acid stools, colic, eructation of gas. The acidity of the stools will also inflame the buttocks.

The subject of the modification of cow's milk, so that these three elements—fat, sugar, and proteids—will be present in the proper proportions, is of considerable importance. At first it may seem an intricate process, but becomes very simple indeed after a slight study.

The composition of average breast milk is as follows:

Fat, 4 per cent.; sugar, 7 per cent.; proteids, 1.5 per cent.; of cow's milk, 3.5 per cent.; sugar, 4.3 per cent.; proteids, 4 per cent. We see by this analysis that cow's milk contains a large excess of proteids, not enough sugar, and fat about the quantity needed. Cow's milk is also acid in reaction. To get the requisite amount of sugar we have only to add milk sugar; to reduce the percentage of proteids, dilute with water. If an increase of fats be indicated add cream; gravity or 16 per cent. cream is usually used. To be exact, decide first what proportion of fat, sugar, and proteids are to be administered and the quantity during twenty-four hours.

By using the formula, according to Bauer, the percentage of the elements may be exactly obtained:

$$\text{Cream} = \frac{Q}{12} \times (F-P),\ M = \frac{Q \times P}{4} = C,\ Ag = Q-(C+M),$$

$M-S = \frac{S-P}{100} \times Q$. Say, for instance, we wish to give 3 per cent. fat, 6 per cent. sugar, and 1 per cent. proteids, and administer 24 ounces in twenty-four hours, using 16 per cent. cream, we have for quantity of cream $24/12 \times 2 = 4$ ounces. $M = \frac{24 \times 1}{4} - 4 = 2$ ounces, water $= 24-(4 + 2) = 18$, M. sugar $= \frac{(6-1) \times 24}{100} = \frac{120}{100} 1.1/5$ ounces.

It will be found much easier to remember this formula than to try to keep in mind the quantity of milk, cream, water and sugar which is required to modify cow's milk to a certain percentage.

Peptonized milk will often be serviceable in changing at once from breast-feeding to artificial diet or after acute illness, in which the digestive functions have been deranged. Peptogenic milk powder is most frequently used for this purpose. It has been said that the long continuance of this is detrimental, authorities claiming that by doing the work of digesting for the stomach in this way the stomach becomes passive and will soon lose the power of digesting. I have yet to see any evil results from its use, and I have used it for several months at a time. The infants have all thrived in every way. A much larger per cent. of fats and proteids will be tolerated by using it. I have seen infants who could not bear 0.5 per cent. proteids in plain dilution take 2 per cent. proteids without any discomfort whatever by using peptogenic milk powder. It seems to me a much better plan to use this when infants cannot bear plain dilutions than to resort to malted milk, etc.

I now depend exclusively on plain dilutions or peptonized milk, and have yet to see an infant who cannot bear one or the other.

In some journal I recently noted the following mixture advocated for infants a year old or more: Two tablespoonsful each of corn, rye, oats, barley, wheat, and bran in one gallon of water, boil to one quart, or about three hours, add milk and sugar, and administer. Having had no experience with this, I am unable to speak of it as a diet, but it seems to be a mixture well worth trial.

In many of the larger cities milk laboratories have been established. By these milk is furnished to the consumer in any desired proportion. The physician writes a prescription for the relative proportion of fat, sugar, proteids, and degree of alkalinity, and the milk is delivered each day in bottles containing the amount to be used at each feeding. The chemist sees that the herd is properly cared for as to diet, cleanliness in milking and utensils.

Milk laboratories, then, bear the same relation to the pediatrist that drug stores bear to the general practitioner. It is a step in scientific accuracy in infant feeding that should be encouraged in every city.

I have now briefly outlined to you a diet list, the next in relative importance is how to administer this.

Regularity in feeding is of the utmost importance. An infant should be fed every two hours from birth to the third month, twice at night; never more. From third month to fifth month every two and a half hours, once at night. After this to weaning time an interval of three hours and none at night should be strictly observed. So important is this that infants should be awakened during the day to nurse. By doing this they will early be taught regular habits. The quantity administered at each feeding can be so regulated that they will awake because of hunger at the required time. An infant who goes for a prolonged period without food is either very weakly or is being too well fed. It is also important to begin at a fixed hour each morning.

By observing this simple and practical rule I have seen infants, six months and under, lie awake perfectly contented for an hour or more after having slept all night and not having nursed since 9 P.M. the previous day, waiting patiently for the daily routine to begin.

I exhibit herewith a nursing bottle which is valuable because it is easy to clean and the nipple closely resembles the human breast. Nursing bottles with long tubes, etc., should be broken before using and then made to occupy a separate space in the ash-barrel. Many cases of milk infection can be directly traced to this ingenious device.

The temperature of the milk should be about 99° F. If too warm, it will nauseate and often cause vomiting; if too cool, it will cause an acute congestion of stomach and may precipitate an attack of bronchitis from sudden reduction of body temperature.

The milk should, of course, be kept free from all extraneous matter, germs, etc. The milkman should keep his hands and the mammary glands of the cow clean, as well as the vessel into which the milk is drawn. The milk should be cooled immediately to a temperature of 60°, and kept at that temperature until delivered. It should then be pasteurized, or boiled when the peptonizing process is used. It should be remembered that it is much easier to keep milk sterile than to free it from bacteria after having been contaminated. The object of sterilization is not so much to kill bacteria as to put the milk in a condition so that germ development will not be such an easy process. It is important that the nipples and nursing bottles should be kept clean by frequent boiling and emersion in soda solution.

The only accurate way to determine whether or not an infant is thriving is to weigh it frequently. An infant should gain at least four ounces per week for several months. If they show no evidences of indigestion, and do not gain in weight, the quantity administered should be increased. There is something radically wrong in the economy when they do not gain in weight, and if this symptom is closely watched we may often be able to prevent serious interference with the nutritive processes long before they manifest themselves in other ways.

After long interference with nutrition by an improper diet, it is astonishing how rapidly an infant will regain the normal weight, and continue to increase, when the proper diet is begun; I have recorded several instances of remarkable gain under these circumstances.

One case is of special interest, an infant 9 months old, breast fed, weighed fifteen pounds, so emaciated and weak that it could scarcely move, bowels moving from eight to twenty times per day. It was fed on peptonized milk January 1, 1899. From this date to March 10th the infant gained six and one-half pounds, one and a half ounces per day.

In closing, I must state that I am gratified to see that in the light of modern research we shall soon have the important subject of infant feeding down to a fair degree of scientific accuracy. That in the future we will not rely on patent foods prepared with no regard to chemical consistence of the greatest of all foods, mothers' milk.

Let us remember that there is much in the mode of administration of a diet. As in the giving of medicine, certain effects will be produced by the same drug, given in different ways, so we will get different results by administering a food in a like manner.

By observing closely the pathological laws of accuracy and regularity, we may yearly add thousands of infants to the list who reach mature manhood, and thereby materially increase the average of longevity.

DISCUSSION.

Dr. W. F. Boggess.—Dr. Leavell has certainly written an interesting paper, and opened a very wide field for discussion. I agree fully with everything he says. I was taught that the artificially fed child stood a very poor show of living, and if it thrived it was more by its extraordinary resistive power than anything else; but under modern methods of infant feeding I am sure that children can be fed just as successfully artificially as they can by the breast, in fact I have lately come to the conclusion that under the pressure of modern civilization very few mothers nurse their children normally, and if a mother is competent and intelligent, that the child can be more advantageously fed artificially than by the breast. Here we get a milk more nearly suitable to the wants of the child by means of mathematical calculation, free from disturbances that women suffer from, especially women in society, with their social duties, household duties, trials and troubles. There are so many things which may interfere with the quality as well as the quantity of the mother's milk that we stand as good or even better chance of rearing a child by feeding it artificially than by the breast. You can very easily make a milk suitable for a child of any age. By knowing from actual experience just what proportion of each ingredient the child will tolerate, you can get a formula that will give the child a perfect milk and one that will insure perfect nutrition. There are many things in making cow's milk suitable for the child that must be considered besides mere chemical constituents of the two milks. The nature of the proteids of cow's milk is entirely different from that of human milk, and while the casein is chemically the same, physiologically it is different. We have this to contend with. We have also to contend with the fact that human milk is free from bacteria, while cow's milk is always filled with bacteria. It is impossible to get cow's milk without any bacteria under the most favorable hygienic surroundings. As I have indicated, the casein of cow's milk is quite different from that of human milk; there is also a difference in the rennet power of the gastric juice upon the two milks, the casein of cow's milk being broken up into solid flakes, while that of human milk is reduced to flocculi. In preparing our milk we should have this in view, and prevent coagulation into hard lumps.

The various prepared foods, I think, are very much overrated. While they occasionally prove useful, they are not as safe as is supposed. The carbohydrates are of two kinds, soluble and insoluble, and when it is remembered that prepared food contains more than seventeen per cent. of insoluble carbohydrates, I do not believe an infant will thrive on it under eight months. If the manufacturer could make his artificial food preparations with the carbohydrates all soluble, he would much simplify the matter of infant feeding. The child cannot digest starch under six or eight months.

The method I use in feeding infants is simply this : The age, condition and weight of the infant are always considered. I start with this formula—milk, two parts; lime water, one part; sugar water, three parts. I try this for a few days. If the child is constipated, I do away with the lime water, and use barley water, or add more plain water in its place. If I find the child seems to be thriving, that the bowels are normal, I keep to this proportion. If I find a diarrhea, or the casein not digested, I reduce the amount of cream to one part, and dilute with sugar and water. If I find the casein well digested, I increase the amount of proteids. In this way we can make a milk suitable to any case, and we can teach the mother how to prepare it. She can prepare enough in twenty minutes in the morning to last the entire day. I also instruct that the milk be sterilized after it has been prepared. Dilution with barley water, lime water, etc., will prevent coagulation of the casein into solid lumps, and will lessen that disadvantage.

Dr. Leavell is very wise in calling attention of the society to the importance and necessity of regular feeding and proper amounts. The average mother, and I might also say the average nurse seem to think that the child's stomach has unlimited capacity, and I have seen them give a child, a month or two old, three or four ounces at a time, and then complain because it could not take five or six ounces of milk at a nursing. More children are killed by over-feeding than under-feeding. We have many gastric troubles in children from overloaded stomachs. There must be intervals of rest. If the child is fed oftener than every two hours during the first three months, you will find the stomach soon begins to show the effects of such mal-treatment. The physician should instruct the mother the number of times she should feed her child during the twenty-four hours, and the exact amount that should be given at each nursing. The first three months a child should be fed ten times during the day, twice at night; after that for three months eight times during the day, twice at night; after that six times during the day, with none at night, etc. The quality and quantity of the milk are of the utmost importance, as well as the manner of its administration to the child. Any one who has studied modern methods of infant feeding will agree that the matter has been much simplified in recent years.

Dr. Jas. B. Bullitt.—The establishment of milk laboratories in the larger cities has unquestionably been advantageous in obtaining greater accuracy in infant feeding. In one of the recent medical journals, however, there appeared an article on this subject from the pen of a very able and excellent gentlemen in Boston calling attention to the fact that the intelligent use and application of such rules as Doctor Leavell has laid down are of greater service than reliance upon the laboratory. The institution of such a milk farm as was first started in Philadelphia is of unquestioned value in the preparation of milk for domestic use. A representative of these people was recently in Louisville, and I had the pleasure of conversing with him on the subject; and it is to be hoped that before long a farm of this kind will be established here which will simply undertake to furnish us with the best cow's milk.

The difficulty of feeding infants artificially is not so much in determining chemically the constitution and preparation of the milk as it is the adaptability of the milk to the infant's stomach, and in this respect it has been well pointed out by Doctor Boggess that the difference in the casein of the milk is of the greatest importance. The difference in digestibility of the casein of mother's and cow's milk will always make mother's preferable to cow's milk. There will always be more or less difficulty in digestion of artificially prepared milk. I know, in my own experience, that while a baby will apparently thrive on artificially prepared milk, notably that prepared with peptogenic milk powder, still there will often be certain intestinal disturbances, resulting in eczema, etc., which will only be relieved when the child's surroundings and feeding have been changed, and its age advanced until it is able to take other articles of diet.

Dr. Leavell's paper is a most excellent one. I believe, however, in trying to follow out his directions the greatest difficulty will be in working out his formulæ. This, as a matter of fact, has been the greatest difficulty, as at the present day many excellent physicians are not capable of working out the simplest problem in algebra. As one sees these formulæ in books, and as one attempts to apply them in practice, unless it be a matter of every-day routine, it is very hard to carry these things in one's head. The physician does not always carry his note book. It is a simplification of these processes that the general practitioner needs more than anything else.

Dr. H. N. Leavell.—Dr. Boggess has brought out the difference in coagulability of mother's and cow's milk. I will say that by using peptogenic milk powder that the casein of cow's milk coagulates in much smaller particles, and I believe this is the reason why the infant tolerates a much larger percentage of proteids than it otherwise would.

The chief trouble with milk laboratories is the expense It is impossible to get milk delivered at houses in bottles sufficient to feed an infant for less than thirty to fifty cents per day, which makes the expense considerable for people in moderate circumstances. The use of laboratory milk, therefore, will be limited until they can bring the expense down to a more reasonable figure.

EDITORIAL COMMENTS

How to Combat Popular Ignorance of Medical Matters

Dr. A. B. Crosby, a successful teacher of a generation ago, used to begin his course of lectures on surgery by a description of the effects of a hot potato placed under a horse's tail. He said that the animal invariably clapped that member firmly against the heated object, thereby making matters much worse for itself, and then dashed off madly at full speed. The doctor would then ask the nearest student how he would go about to relieve the horse, and would affect to be greatly delighted by the degree of intelligence implied by the answer, "I would remove the potato." Dr. Crosby meant to convey in an allegorical manner the almost total lack of appreciation of the relation of cause and effect possessed by mankind, and especially in cases where medical matters are concerned. The natural man is inclined to ascribe his physical misfortunes to such incidents as meeting a cross-eyed individual or walking under a ladder. Practitioners in Turkey and Russia frequently mention instances of that degree of childish credulity in their patients, but it is not necessary to go so far from home, or to descend so deeply in the social scale for examples. Our modern faith healers affect to believe that disease, or rather its simulacrum, arises from the malicious or envious thoughts of others. The medical man often finds himself wondering as to whether man will ever become sufficiently cultivated to distinguish between matters of faith and reason in medical subjects. From analogy it would appear that we do not begin at a sufficiently early age to give children fundamental training in such matters, and that we do not set about the task in the proper way. It is a question, however, whether the child-mind, being half savage, could be capable of proper conceptions of the relations of cause and effect. It appears to be certain that school instruction in physiology is almost wholly unproductive of benefit. The pupils study a poor, garbled, expurgated book, and any pretence at systematically teaching a subject like physiology to school children is inadvisable from any standpoint. But it is by no means certain that practical subjects, something in the line of "First Aid to the Injured," might not be profitably taught to children, and it is impossible to say how far this sort of teaching might be extended to advantage. Nothing but a practical trial will determine the feasibility of this project because there are weighty theoretical objections to it. In addition to the defective appreciation of cause and effect, which is inseparable from childhood, there is another weighty objection, which, we suspect, contains the true explanation of the inaptitude of the average human being in dealing with medical subjects. We refer to the inborn dislike and repugnance felt by most individuals towards anything savoring of sickness and death, including the sick-room, accidents, deformities, surgical operations, hospitals and all affiliated subjects. Undoubtedly these feelings of fear and disgust interfere with the ordinary action of the mental faculties in dealing with medical matters, and the child, no less than the adult, has this sentimental point of view fully developed.

On the Consequences of "Adenoids" in Children

Ever since Meyer first gave to the medical profession his demonstration of post-nasal adenoids, this affection has steadily gained importance in the minds of practitioners until there is a possibility that too much pathological significance has been imputed to it. On the other hand, it is quite possible that "the half has not yet been told." Thus far, it has been claimed that adenoids are the cause of most cases of chronic catarrh in young children, particularly when the accompanying discharge is of a semi-purulent character. The thick, viscid mass which protrudes and hangs from the nostrils of so many children is said to be almost *prima facia* evidence of adenoids. The agency of these growths in the prcduction of deafness is now well-known to the majority of practitioners, and the same condition may be responsible for false croup. It has been repeatedly claimed that the presence of adenoids in the rapidly-growing child is sufficient to arrest the development of the facial bones, and thus produce deformities of the osseous tissues of the septum, palate and superior maxillary. With regard to the effect upon the general health through the enforced mouth breathing and defective oxygenation, etc., and the coincident effect upon the physiognomy, the claim has been made in all seriousness that the "scrofulous facies and habitus" of the old clinicians are neither more nor less than the characteristic facies and habitus of adenoids. It is the adenoid child who has the irritating nasal discharge which often causes excoriation and thickening of the upper lip, the cervical adenopathy, poorly developed thorax, and the rest of the phenomena which make up the picture of scrofula. We shall allude again to the possible connection which may subsist between adenoids and scrofula. There yet remains for consideration an effect of adenoids which may outrank in importance those already mentioned. We refer to the results of this affection upon the mind of the growing child. Nearly all authorities agree in having the belief that adenoids are associated with a certain amount of mental hebetude, and there are numerous theories to account for this phenomenon. Perhaps the oldest view is one which places the responsibility for this symptom upon defective oxygenation. A common-sense view, which is a partial explanation, is the deafness theory, which assumes that the adenoid child is not dull in mind, but merely in hearing. Guyes' well-known study of aprosexia, or want of attention, seeks to reduce the mental hebetude of the adenoid child to inability to concentrate the attention upon a given subject, while his explanation of the phenomenon by a hypothetical obstruction of the lymph drainage of the endocranial cavity has commanded the respect of the practitioner in the absence of anything more definite. Ribot's psychological explanation is, perhaps, more susceptible of demonstration. He holds that since acts of attention are accompanied in all animals by a temporary suspension of the respiratory rhythm, the occluded nose of the adenoid child, with the constantly resulting air-hunger, must necessarily interfere with the psycho-physiology of the act of attention.

On the Etiology and Prevention of "Adenoids" in Children

Enough has been said in the previous article to convey a fair idea of the great harm wrought upon the welfare of the race by adenoids and the urgent need of the introduction of some measure capable of wholesale application which shall antagonize the development of this condition. Much good is done by the practitioner who operates successfully upon his small patients, but surgical interference in very young children is dreaded, both by the patient and its parents and by the operator himself. Many practitioners do not care to operate without the employment of chloroform, and even with all precautions the removal may either be imperfect or recurrence may take place. When the children are older, surgical interference is, of course, a much more trivial affair, but much mischief may have already been accomplished by the growths. As medical practice goes, the indications are fairly well filled by operating in these cases, but here, as elsewhere, prevention would be much better than cure. We know little or nothing of the causation of adenoids, and hence have no entering wedge to attempt to secure prophylaxis. Within a short time, however, facts have seemed to point to a possible efficient cause of adenoids. Recent investigations into the state of the cervical lymph ganglia in children appear to show that at about the period of second dentition bilateral multiple chronic polyadenitis is almost universally present; and that there is no known agency capable of producing this condition in this latent form excepting the tubercle bacillus. In other words, we have here a benign, localized tuberculosis of feeble virulence which is destined, in the great majority of cases, to be outgrown, but which, in a large per centage of instances, developes into caseous, scrofulous glands and metastases to the lungs, bones, and other organs. If this view is wholly or even partly correct (and of course it antagonizes the prevailing inhalation and alimentary theories of tuberculosis), it must follow as a corollary that the lymphoid tonsillar structures could hardly escape in consequence of such a universally common assault upon the cervical ganglia. This origin of adenoids has also been approached from a different standpoint, and it has been ascertained that in a fair percentage of cases (ten or twenty, perhaps) latent tuberculosis is actually present in the enlarged pharyngeal tonsil. If this morbific influence is able to cause adenoids to such an extent it is not improbable that it may be at the bottom of most or all of these cases. Hardly any practitioner could doubt that the same cause is behind the engorgement of the cervical ganglia, on one hand, and the enlarged pharyngeal and faucial tonsils, on the other; and if the former lesions are essentially tuberculous the latter must be. From this point of view tuberculosis becomes essentially a disease of early childhood. All children are exposed to the bacilli, which lodge in the throat and nose and infect the adjacent lymphoid structures. Tuberculosis of adults becomes from this standpoint analogous to the tertiary or late manifestations of syphilis. The question of the prophylaxis of adenoids becomes therefore merged in the vast subject of the prevention of tuberculosis.

On Divided Attendance in the Care of Children as a Preventive of Gastro-Intestinal Diseases

Several years ago Prof. Heubner, of Berlin, in seeking to reduce the alarming mortality in his infant asylum, made a trial of the following plan in some of his wards. He appointed two nurses for a certain number of the children, with the service divided as follows: One nurse had sole charge of preparing the food, cleansing the nipples, feeding the child, and cleansing its mouth. The other devoted herself to attention to the napkins, dressing and bathing the child. The carrying out of this idea was intended to prevent any of the intestinal bacteria from gaining admission into the stomachs of healthy children. Prof. Heubner's experiments could not be carried out with proper rigidity on account of certain administrative shortcomings, but he appears to think that this departure was eminently sensible, and that he saved a number of lives by the precautions thus taken. It would appear that this principle is capable of being carried out in private practice in large families, and in particular where foreigners are crowded into the tenements of our large cities. The physician might instruct one of the women or girls in charge of the children to carry out exclusively the directions for feeding, while another's sphere of activity could be limited to laundrying the clothes, changing the napkins and bathing and dressing the children. All ideas of this sort communicated to the public have an educational value, and undoubtedly are able to lead to some saving of life, even if they do not meet with immediate or general adoption.

SOCIETY REPORTS

NEW YORK ACADEMY OF MEDICINE—SECTION ON PEDIATRICS.

Stated Meeting May 11, 1899.

HENRY KOPLIK, M.D., Chairman.

A Case of Sub-Acute Phosphorus Poisoning in a Baby.—Dr. HENRY KOPLIK read the report of the following case, which appeared to be unique, and illustrated a remarkable susceptibility to phosphorus in very small doses. A male infant of ten months had been brought to his clinic, because of an intense anæmia and a greatly enlarged spleen. In spite of the fact that the infant had been breast-fed, it was markedly rachitic, and both liver and spleen were enlarged, the former reaching about one inch below the free border of the ribs, and the latter to the level of the umbilicus. The temperature was normal. The infant had, as yet, no teeth. After observing the baby for a few days, it was placed upon a phosphorous mixture containing one minim of the officinal oil of phosphorus dissolved in one ounce of oil. This gave the infant 1/800 of a grain to each teaspoonful, and this dose was given three times daily. For two weeks the infant seemed to thrive, then it was brought back with fever and diarrhea. It was fretful and irritable; the lymph nodes behind the sterno-mastoid were now enlarged; the size of the spleen was unchanged. A small spot of eczema appeared on the scalp, and was treated with a salicylic application, in the hope that the glands might subside; if the enlargement was due to the eczema. Two days later it was noted that the cervical nodes were larger, and that those at the angle of the jaw were also involved. There was a slight petechial eruption here and there on the extremities. The phosphorus was suspended, and within five days large blotch-like hemorrhages appeared on the extremities and abdomen. The diarrhea continued, and there was some blood at times in the stools. The glands continued to enlarge, and they felt hard. An incision made into the brawny masses of glands at the back of the neck evacuated a very little pus. On opening the glands they presented a lardaceous appearance. Within an hour after the operation, the baby was brought back to the clinic with a free parenchymatous hemorrhage, which soaked the bandages. For the next few days there were hemorrhages in different parts of the body; also epistaxis and bloody stools. The spleen and liver continued about the same size. The baby died of exhaustion. At the autopsy the skin and mucous membranes were pale, and the muscular tissue red. The abdomen contained a fluid of slight turbidity, yielding negative results on culture. There were punctate hemorrhages in the peritoneum, and the mesenteric lymph nodes were enlarged. The spleen was large and very friable. Cultures made from its substance showed a streptococcus. The marrow of the bones was red. The liver was not enlarged to any great extent, but both liver and kidneys were intensely white; they looked as if they had been subjected to a prolonged washing and hardening in alcohol. The markings of the cortex and medulla of the kidney were barely visible, and, on section the organ presented a yellowish-white color. The bowel showed no hemorrhages or ulcerations. Microscopical and bacteriological examination showed intense fatty degeneration of the liver, parenchymatous degeneration of the kidneys, but nothing abnormal in the splenic tissue, nor was there any bacterial growth from this organ. From this it was inferred that the streptococci found in the culture taken from the spleen were the result of accidental contamination. It should be said, in considering the question of diagnosis in this case, that the microscopical examination of the blood had excluded leukæmia and malaria. The cervical lymph nodes might have been moderately enlarged, as a result of the eczema of the scalp, but, by itself, it would hardly explain the hemorrhages from the operation wound, and from the sub-cutaneous structures, and the punctate hemorrhages of the peritoneum. With the exception of the suppurating nodes of the neck, the other symptoms and signs followed closely the picture of phosphorous poisoning, even to the failure to develop a healthy granulating process after the operation. The pathological specimens had been obtained through Dr. Ware, of the Surgical Department of the Good Samaritan Dispensary.

Acute Inflammation of the Ear, Complicating Scarlet Fever and Measles.—Dr. Charles H. May read a paper with this title. He said that in an article written by him ten years ago he had presented statistics from five thousand cases, showing that 10 per cent. of all deaf persons owed their affliction to an aural complication of scarlatina. Otitis was not so apt to complicate measles, and when it did it was more commonly of a mild catarrhal form. Aural complications were present in about 20 per cent. of all cases of scarlatina. The frequency varied in different years, and with different seasons, being greater during the colder months. There were two types of otitis, viz.: (1) the catarrhal, and (2) the purulent. It was often impossible clinically to differentiate between these two forms until after perforation had occurred. Apparently the streptococcus was responsible for the infection in the very severe forms of acute purulent otitis. This complication usually made its appearance near the end of the first week of scarlatina, and, in a general way, its severity corresponded with that of the throat inflammation. A rise of temperature to 102° or 103° F. at this time, associated with an aggravation of the constitutional disturbance, should lead to the suspicion of inflammation of the ear. The subjective symptoms were more or less intense pain in the ear, much worse at night, a sense of fullness and throbbing, and sometimes dizziness or noises in the ear. Infants were apt to place the hand on the affected ear, or on that side of the head. Examination of the drum membrane would show more or less redness, which, when limited to the upper part, pointed to severe purulent inflammation. In the catarrhal cases the redness was more diffused. Sometimes the membrane would be covered with a grayish layer of epithelium, thus obscuring the red color. As the inflammation progressed, there would be more or less bulging of the drum, and if not relieved, spontaneous perforation of the membrane would take place, usually in the posterior part. In many cases after such spontaneous perforation, the process changed from an acute to a chronic one, and resulted in sloughing of the lining of the tympanum, and caries of the ossicles, and of the bony walls. This not only impaired the hearing, but constituted a menace to both health and life.

An important part of the treatment of this condition was its prevention, and this could be accomplished to some extent by proper care of the nose and throat. To properly cleanse the nose, the nostril of one side should be compressed, so that the entire force of the expiratory effort was expended upon the opposite or free nasal passage. In the class of cases considered in this paper, the writer preferred to cleanse the nose and throat by swabbing with a ¾ per cent. solution of sodium chloride. In carrying out the so-called abortive treatment, a sufficient dose of an opiate should be given to produce sleep; the bowels should be evacuated, and the patient protected from draughts of air. *Dry* heat should be applied in the form of a hot-water bag, or if the pain were very severe, boric acid solution at a temperature of 115° F. might be allowed to run into the ear. The local abstraction of blood by means of the artificial leech applied in front of the tragus often gave great relief. He was an advocate in the early stage of middle ear inflammation of the treatment by inflation, preferring, when possible, to do it by means of the catheter. The introduction of the catheter was difficult, but not impossible. With the inflation, he was accustomed to employ suction of the tube and tympanum—a very useful addition to the treatment, which he had never seen described by others. Even by the Politzer method, suction could be practiced. It must be confessed that in a considerable proportion of cases the abortive treatment failed. If the symptoms continued unabated, or were less severe by day and worse than before at night, the opening of the drum membrane should not be longer delayed. Incision of the drum was always excruciatingly painful, and hence the knife should have the sharpest possible edge. He preferred the Græfe knife, and making a free incision over the whole bulging area. Often only bloody serum would escape for the first few hours. After the operation, a little absorbent cotton should be placed loosely in the meatus, and the patient directed to lie upon the affected side to favor drainage. Irrigation should be resorted to only when the canal became blocked by tenacious mucus. Careful inquiry seemed to show that there had been fewer aural complications in connection with scarlatina and measles during recent years than formerly. They would be still fewer if the nose and throat were properly cared for, and my advice followed: "When in doubt, incise."

Mastoid Complications in Otitis of the Exanthemata.

—Dr. EDWARD B. DENCH read this paper. He said that in young children inflammation of the ear was sometimes not attended by rupture of the drum head, but by extension of the inflammation backward, and the formation of a post-auricular swelling. Such a swelling was often the first distinct evidence of inflammation of the ear in grip cases When it was evident, by inspection, that there was an accumulation of secretion in the tympanic cavity, paracentesis should not be performed, but instead an incision should be made into the drum-head. He was accustomed to do this with a knife, keeping the point of the instrument in contact with the bone, and carrying it upward so as to not only incise the drum membrane, but also secure depletion of the membrana tympani. When the mastoid region became tender, it was well to apply the Leiter cold coil for a short time, but not more than forty-eight hours, as prolonged cold often deluded the physician and patient into the belief that further measures were not demanded. The evacuation of a post-auricular abscess through an incision into the soft parts was not sufficient; even in young children the bony structure of the mastoid should be opened. Free drainage from the middle ear should always be established. It was always advisable in children to extend the incision downward considerably, and expose the tympanic ring, for otherwise there was great danger of entering the middle cranial fossa.

Otitis of the Exanthemata of the Pediatrician and General Practitioner.—Dr. J. HENRY FRUITNIGHT read this paper. He said that an experience of a quarter of a century, and with five thousand cases of the exanthemata, he had met with otitis as a complication in fully one-third of the cases. In twenty-eight cases the otitis had been bilateral. Otitis was apt to be developed in those cases having much congestion or inflammation of the faucial mucous membrane. He had often cut short an attack, mitigated its severity and averted deafness by at once paying attention to the first symptoms of disorder of the ear. The cases left untreated, or improperly treated, would often exhibit mastoid inflammation. The mastoid region had never been involved in the cases he had attended from the bpginning. He had noted that children having tubercular, thehilitic, or so-called strumous taint, were very apt to have ysis complication, and in a severe form. It was necessary to pay scrupulous attention to the nose and throat, and if this were done, otitis could often be prevented. In his opinion, it was not very often necessary to incise the drum membrane, but in slowly suppurative cases it was more likely to be demanded. In cases of purulent otorrhea it was his custom to introduce peroxide of hydrogen first, then wash out with water, and finally instill a few drops of alcohol in water.

Dr. Emil Gruening said that the use of the catheter inflation in a child sick with scarlet fever was certainly unnecessary, and it was an exceedingly difficult procedure. Moreover, if streptococci were in the throat, they were liable to be forced into the ear. He was an advocate of the early incision, and of making it under anæsthesia. It did not seem to him that it was possible to make the incision properly with sufficient freedom unless an anæsthetic were used. The use of the ice-coil for forty-eight hours seemed to him undesirable, for if suppuration were actually going on, it meant the loss of precious time, and if there was no suppuration, it was not necessary. Dr. Dench has spoken of mastoid abscess, and post-auricular abscess as identical, but when there was a post-auricular swelling, it indicated a mastoid disease of considerable duration.

Dr. Arnold Knapp emphasized the importance of systematically examining the ears in measles and scarlatina. Granting that the ear complication was due to extension through the Eustachian tube, the nasopharynx was the focus, and applications to be effective must be directed to this part, a very difficult procedure in young children. Incision of the drum-head could hardly be done too early, and certainly should be done by the general practitioner without inflicting any harm.

Dr. J. E. Winters said that if the importance of this subject were appreciated by general practitioners, every one in general practice would have come to this meeting to listen to the papers. He had observed two lines of treatment in these cases at the Willard Parker Hospital. Up to a little over two years ago the conservative treatment had been employed, and since then the radical treatment had been in vogue. The results should convince every one of the importance of every case of complicating otitis being seen early by an aurist. He did not believe the general practitioner was competent to properly treat these cases. Regarding the frequency of this complication he would say that it varied greatly at different periods. During 1898 otitis media had occurred in a little over 25 per cent. of the cases at the Willard Parker Hospital. In the same epidemic it was not unusual to find otitis in upward of 50 per cent., and in another portion of the same epidemic in perhaps not more than 10 per cent. of the cases. He did not believe it was at all associated with the severity of the disease, but he could not agree with Dr. Fruitnight in believing that it was connected with the severity of the throat lesions. During some epidemics cervical adenitis, for example, was of extreme frequency, whereas in other epidemics, perhaps a few months later, cervical adenitis was quite rare, and the same was true about the proportion of cases of cervical adenitis that would go on to suppuration. If a child had adenoids, it was sure to have otitis complicating scarlatina. If the tonsils were sufficiently large and pressing backward so as to interfere with the patency of the Eustachian tubes, there was much more likelihood of cervical adenitis. The one symptom of greatest importance was the temperature curve. Many cases of suppurative otitis certainly did not have pain, and perhaps only the slightest tenderness on pressure over the tragus. He did not believe that otitis could be eliminated in every instance by physical examination. He cited several cases in which he had made a correct diagnosis of otitis by exclusion, and yet a good aurist had been unable to find evidence of disease of the ear on inspection. The use of acetanilide and similar preparations he believed was often responsible for much deafness; is was the duty of the general practitioner to call in an aurist as soon as there was a reasonable suspicion of the existence of otitis.

Dr. HENRY DWIGHT CHAPIN said that many cases of otitis media in very young children were promptly cured by spontaneous rupture of the drum membrane. It was probable that the severity of the inflammation in individual cases was dependent upon the kind of infection. Owing to the crookedness of the auditory canal it was exceedingly difficult, for the general practitioner at least, to obtain a view of the drum membrane in young infants. He would not therefore favor the routine practice of attempting to inspect the drum membrane in infants suffering from scarlatina unless the temperature or the symptoms pointed to probable inflammation of the ear.

Dr. A. JACOBI thought the discrepancies in the statements made by the previous speakers were best explained by the fact that the physician was not called upon to treat otitis merely, but individuals affected with this disorder. He said that the majority of physicians, himself included, were of the opinion that ear disease was largely dependent upon diseases of the nose and throat. If fluids were forcibly injected into the nares of a child in the course of a diphtheria, otitis would almost surely result. If the child dreaded the injection, then irrigation from a fountain syringe should be substitnted, or still better, the washing should be done with the aid of the nasal cup. He was an advocate of the practice of daily irrigating an infant's nose with normal saline solution; it was far more useful to wash the nose inside than outside. When small adenoids were present, and were kept clean in this manner, they would give no trouble, and would probably disappear spontaneously.

Dr. S. J. MELTZER said that about two years ago the results of 100 autopsies on children in Breslau had been made public, and they showed that only 9 children had been found to have ears free from otitis media. A report from the Copenhagen Hospital showed otitis to be present in 56 out of 61 cases examined. In a very few of these cases had the otitis been recognized during life. He was inclined to believe that incision of the drum membrane was not always required, and that it was not so innocent a procedure as some seemed to think.

Dr. FRANCIS J. QUINLAN spoke of the great importance of gentleness in irrigating the nose of the infant, even when a fountain syringe was used. The fluid should be poured in gently while the patient's mouth was kept open.

Dr. J. H. WOODWARD emphasized the great importance of making the diagnosis of mastoid disease before the occurrence of a post-auricular swelling. It was highly probable that when the tympanic cavity was acutely inflamed the mastoid antrum was also involved.

Dr. **Jacobi** said that he was accustomed to irrigate his own nose daily, and had learned by experience that when the fluid was allowed to flow during inspiration no inconvenience was experienced, but not so if done during expiration. It was not sufficient for children to merely keep the mouth open; small quantities of fluid should be allowed to enter the nose intermittently.

Dr. **May** said that while a number of cases of otitis media were cured spontaneously, it was too risky to assume that recovery would take place without incision of the membrane. He had not intended to say that the passage of the Eustachian catheter was an easy matter in children; it was always very difficult. It seemed probable that the pathological reports cited had referred to all varieties of otitis—not merely suppurative otitis. In his opinion, the question of masking the symptoms by the administration of such remedies as acetanilid did not enter in the early stages; when, however, there were grounds for suspecting suppuration, incision of the drum membrane should not be delayed.

Dr. **Meltzer** explained that these pathological reports had distinctly stated that the otitis had been either purulent or muco-purulent.

Dr. **Gruening** said that the opinion seemed to be held that cases of otitis media in which only serum escaped on incision of the membrane were mild, but this was not true, as the serum almost always contained streptococci.

Dr. **Dench** said that he agreed with Dr. Gruening as to the advantage of using general anesthesia when incising the membrane, and for this purpose he had found nitrous oxide gas exceedingly valuable and convenient. A sudden and abrupt rise of temperature in the course of one of the exanthemata was strongly indicative of a complicating otitis, and it should be remembered that pain was not a good guide. Mistakes in inspecting the ear in cases of otitis media complicating the exanthemata might occur because of the fact that the membrane presented the normal color, but it should be noted that in a case of this kind entirely lacked its natural lustre. He did not consider spontaneous rupture of the drum membrane ever advisable. He could not agree with Dr. Jacobi regarding the use of the nasal douche or nasal cup in diphtheria except where the nose was distinctly blocked with membrane. Adenoids would disappear more quickly by cool baths and attention to hygiene than by simply irrigating the nasal passages. The inspection of the drum in infants would be greatly facilitated by pulling *down* the external ear, and looking upward into the auditory canal.

Dr. FRUITNIGHT, in closing the discussion, said that he could fully corroborate what Dr. Jacobi had said about irrigating the nose.

The Therapy of Dysentery should, according to Z. BLINDREICH (Wolmar) who passed through a large epidemic, be conducted as follows. Besides recommending hygienic-dietetic measures (continued warmth to the abdomen) the treatment should begin with calomel in large doses, immediately followed by bismuth salicyl., combined properly with plumb. acet. and opium:

℞	Decoct. salep	100.0 (ʒ xxvii)
	Bismuth salicyl	3.0 (gr. xiv)
	Plumbi acet.	0.03 (gr. ss)
	Tinct. thebaic	gtts. x

S. To be well shaken, a teaspoonful every two hours. Accompanying this clysmata of acid tannic containing a few drops of tinct. opii should be administered.—*St. Petersburg medic. Wochenscrift*, 1898, *No.* 43.

A Tænia Mediocanellata in a child not quite 7 weeks old was found by Dr. Wolff (Neunkirchen), the father of the child brought a piece of the worm 20 cm. long to the doctor. The child was nursed by its mother and received no food, none of the other members of the family were affect by tapeworm. —*Berliner klinische Wochenschrift*, 1898, *No.* 40.

ABSTRACTS

A CASE OF PURULENT SINUSPHLEBITIS AND CIRCUMSCRIBED MENINGITIS, FOLLOWING CHOLESTEATOMA OF THE MIDDLE EAR, CURED BY OPERATION.

W. LINDT (*Correspondenzbl. f. Schweizer Aerzte, 1898, xxvii., 399*) relates the case of a boy, 4½ years of age, presented to the Medic-pharmac Bezirksverein Bern. (8, ii., '98): The patient suffered with an acute otitis media purulenta and mastoid abscess three years ago; the latter was cured by a simple operation, and the child was dismissed from treatment, notwithstanding the continuance of the otorrhea. On December 17, 1897, the boy was suddenly taken ill with fever, pain in the throat and the left ear, and behind the ear. The affection was at first thought to be diphtheria, as an epidemic of the latter disease at this time prevailed in the town. This was followed by chills and somnolence. Ten days after the beginning of illness the patient came under Lindt's observation. A diagnosis was made of chronic fetid otitis with cholesteatoma, complicated by purulent sinusphebitis and commencing pyemia. General condition very poor, emaciated, the mind somewhat clouded; delirium, however, absent, as were also symptoms of irritation on part of cerebral nerves; commencing rigidity of the neck muscles marked; pyemic fever. Pulse over 100, intense headache, moaning, jactitation, disgust for food, edema of the scalp behind the fluctuating tumor, extending from the mastoid process to the occiput.

December 28th.—Operation. The whole middle ear was thoroughly exposed, and found to be filled with purulent cholesteatoma masses. The bones were to a great extent necrosed, black, especially in the direction of the posterior fossa of the skull toward the sigmoid sinus; the sinus itself filled with a dark-brown fluid; the former was exposed as far as its posterior upper angle (toward the brain), and as far as possible toward the heart by the greatest portion of the mastoid process.

On account of the continued fever and fetid suppuration of the sinus from the direction of the bulb, the whole mastoid process was resected on December 30th as far as the stylomastoideus, and the sinus still more exposed in the direction toward the brain, until the healthy dura was reached. At the same time the inner necrosed, disintegrated sinus wall was removed to the extent of 1½ to 2 cm., and the yellowish-tinted pia of the cerebellum exposed, which was adherent at the periphery of the necrosed portion of the dura to the healthy dura. This was followed by a rapid decline of the fever and improvement in the general condition, disappearance of the rigidity of the neck muscles, cessation of suppuration in the sinus and formation of normal granulations of the pia and dura.

On the eighth day after the operation there was a return of fever (without chills) and some cough for two days (a slight metastasis to the lung?) followed by a permanent afebrile condition. Some swelling of the lymphatic glands below the sterno-cleido mastoid occasioned a torticollis, which lasted for two or three weeks.

Seven weeks after the operation a perfect cure had taken place, leaving the retro-auricular opening covered with solid epidermis.

This case is interesting (1) in that the boy had suffered with an acute mastoiditis, and was operated on for the same three years before the dangerous affection made its appearance, and that the otorrhea had not been cured. This should teach us not to stop treatment in these cases, but to proceed to a radical operation if the otorrhea is not cured in a few weeks after trepanning in an acute case, otherwise the formation of cholesteatoma will surely follow with its dangerous results to life.

The sudden appearance of the complication, which is positively fatal where a thorough operation is not at once undertaken, was in all probability caused in this case by the acute throat affection (perhaps diphtheria). Patients suffering with a chronic purulent otitis are in great danger from acute infectious diseases, and especially from influenza. (2) The extension of the process: Total destruction of the whole transverse sinus from the angle to the bulb, and circumscribed meningitis. A solid thrombus in the bulb (which was not found by Lindt, and which he did not waste time to seek) separated the purulent matter from the jugular vein and the heart. Greater disintegration of the thrombus was fortunately prevented by the timely exposure of the sinus, and hence only a few chills and slight pyemic symptoms made their appearance. Lindt did not attempt to ligate the jugular vein at the first operation, as the condition of the patient necessitated the termination of the operation, intending to rectify this at the first appearance of further pyemic symptoms. This necessity did not occur. The occlusion by the thrombus in the bulb was firm and its disintegration was prevented by the operation. It was, at all events, somewhat risky to wait further developments.

A contraindication to ligation was not present in this case from the moment that the sinus was opened nearly within reach of the bulb.

The diagnosis of sinusphlebitis was easy to make, although the circumscribed meningitis could not be diagnosticated; a general incipient meningitis did not seem probable; it could not, however, be positively excluded, any more than the presence of a still quiescent cerebellar abscess. The latter would have been recognized during convalescence, and could have been easily found by way of the operating wound. This case teaches the necessity of a rapid and radical exploration as soon as a positive suspicion of any sinus affection is present.

THE PARASYPHILITIC SYMPTOMS OF CONGENITAL SYPHILIS IN EARLY CHILDHOOD.

Katzenstein (*Munch. Med. Wochenschr., 1898, xlv., 1116*), says that children of syphilitic parents, in whom the well-known symptoms of typical syphilis are absent, present a long series of phenomena, which are absolutely necessary for a proper diagnosis, and therefore also for the adoption of successful therapeutic measures, especially as we frequently meet with great difficulties in eliciting the previous history. As regards the individual symptoms, in the first instance, we will find that anemia is the most frequently detected and most frequently occurring. The children occasionally look pale, and this pallor has a certain yellowish tint. In severe cases this yellowish tint is so marked that the arteries do not seem to contain any blood. A very constant accompaniment of syphilitic anemia, is enlargement of the liver and spleen. These hypertrophies, together with the anemia, disappear under anti-syphilitic treatment. Together with an enlarged liver, marked ascites could be demonstrated in a number of cases; there is, however, an even distension of the abdomen. These anemic children may frequently be very well nourished; some of them may even present a well-developed panniculus adiposus.

Children with parasyphilis frequently suffer with a chronic intestinal catarrh. These may be known by the absence of improvement when the well-known remedies for intestinal catarrh are administered, but in which an antisyphilitic treatment will rapidly cure the catarrh. Syphilitic children also frequently suffer with a bronchial catarrh, where no specific disease can be demonstrated, same as in the parasyphilitic intestinal catarrh. On account of the active cachexia, due to latent syphilis, a greater susceptibility of the mucous membranes is caused, which may lead to their most intractable inflammation. These bronchial affections are usually also accompanied by other parasyphilitic symptoms, and can only be rapidly cured by combining a causal with the symptomatic treatment. A chronic coryza evidenced by more or less suffering is only very rarely absent in parasyphilitic children. A certain number of parasyphilitic children are born prematurely and are under weight. These will be stunted in their bodily as well as their mental development. Others will, it is true, be born at term and in normal labor, but the developmental disturbances will occur later. These children are, as a rule, those which succumb to atrophy, where we are unable to recognize the true cause of the latter. Two other important developmental defects are frequently found in families where syphilis is present, namely, spina bifida and chronic hydrocephalus.

The prognosis is favorable where proper treatment is administered to parasyphilitic children, provided that treatment is continued for a very long time, as syphilitic symptoms will undoubtedly make their appearance sooner or later, when treatment is interrupted. Treatment consists, in the first instance, in administering to these children when parasyphilis is diagnosed or suspected, very minute doses of calomel and potassium iodide; secondly, in the prophylactic treatment of children yet to be born, by putting father or mother on a course of antisyphilitic treatment.

ON SYPHILIS IN CHILDREN.

Antonelli (*Annales des médicine et chirurgie infantiles, 1898, 12; Der Kinderarzt, 1898, ix., 219*) an occulist, according to his experience, believes congenital syphilis to be much more frequent than is usually supposed, and thinks that the oculist and the dermatologist had especial opportunity to demonstrate this. In congenital syphilis there is nearly always, if not always, present changes in the fundus of the eye (neuritis optica, chorio retinitis, etc.), which have already developed in uterine life or in very earliest childhood, and which always leave behind traces which can be demonstrated by the ophthalmoscope. The greater number of cases of congenital syphilis are, however, of a benign nature, and curable with proper treatment. The author found present most frequently Hutchinson's three signs—those relating to the eye (keratitis parenchymatosa, etc.). The changes in the fundus of the eye are for him the most important signs to demonstrate congenital syphilis, or to arrive at a diagnosis in doubtful cases.

CONTRIBUTION TO THE ETIOLOGY OF PSEUDO-CROUP.

Zimmermann (*Münch. Med. Wochenschr., 1898, xlv., 922*). Pseudo-croup manifests itself always and under all circumstances equally as an inspiratory dyspnea, which suddenly makes its appearance in healthy young children at night as a hoarse, barking cough, and which, in spite of its threatening aspect, ends in perfect and spontaneous recovery; a disposition to its recurrence is, however, left behind. Most authors look on the cause of its occurrence as being a disease of the larynx. According to the author, who has treated sixteen cases of pseudo-croup within a period of two years, there is some connection between adenoid vegetations of the nasopharyngeal space and pseudo-croup. The manner in which adenoid vegetations produce an attack of pseudo-croup may, without too great a strech of imagination, be explained as follows: The mucus from the nasopharyngeal space may enter the entrance to the larynx, especially in the recumbent position, and produce here, analogous to the spasm of the glottis, which is caused in painting the larynx, a contraction of the false vocal chords; by a coughing paroxysm, which obtains its barking character from the overlapping of the false vocal cords, the closure is opened, but only temporarily; at the end of the cough it again becomes closed, even before sufficient time has been given for a deep inspiration, and we witness the picture in a typical manner of an attack of asphyxia brought on by absence of oxygen. Only after the contraction of the false vocal bands is again relaxed, as a result of the carbonic acid intoxication, respiration is again resumed. This manner of production of the spasm, if assumed as correct, would probably also explain the presence of subchordal edema; this would represent, in an extreme case, not the primary, but a secondary transudation into the loose submucous tissue, produced by a hyperemia *ex vacuo*. That pseudo-croup is not a disease *per se*, but only a symptom dependent on the presence of vegetations in the naso-pharyngeal cavity, is proved by the fact that a removal of the adenoid vegetations puts an end to the pseudo-croup.

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ORIGINAL ARTICLES

MALARIA IN CHILDREN.

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Continued from the August 15th issue.

BUT that which chiefly attracts the attention is the aggravation of the intestinal flux. The serous or serobilous evacuations of extremely fetid odor occur with increasing frequency and at last become continuous or overlapping and absolutely incoercible; and then at the same time other equally grave symptoms related to the nervous system are seen to appear. Sometimes it is a weakness of the nerves which plays the principal rôle, adynamia is pronounced, the child remains dull, the eyes are fixed, and the eyelids half closed, the dorsal decubitus is maintained, the limbs are immovable, respiration becomes slow, the extremities are cold and the skin covered with perspiration. The peripheral hypothermia, which is associated in many instances with central hypothermia, extends to the rest of the body, and so one has before the eyes the picture of *algidity*. Then there ensues one of two things—either the rectal temperature attains a maximum elevation in contra-distinction to the peripheral coldness, or (which is not so very rare) the central thermal standard becomes low, thereby conforming with the continuous temperature. This latter variety, when it coincides with a serous diarrhea, offers quite an analogy to infantile cholera, and merits the name of choleriform. Under other circumstances the febrile reaction is expressed by a soporific, comatose state. The fever takes then an almost continuous type, the thermal standard presenting only feeble oscillations with a constant tendency towards elevation. On many occasions I have seen a maximum of 41°, 42°, and even 43°. The skin is extremely dry and burning, the lips are also dry and fuliginous, remaining half open, while the eyes are partly closed, without any expression, although in some instances they are open and brilliant. The respiration is accelerated and often of a sighing character, and the child remains in a state of profound dullness or of true coma, from which it is often difficult to rally. I have often found my little patients comatose to such a degree that they did not respond to the most severe excitations, and scarcely cried, even when vigorously shaken. In some cases the soporific state is followed by a period of great agitation, especially during the night. The child constantly changes its position, throwing its arms and legs about; the dyspnea is accentuated, the features distorted, the eyes dim and cast upwards. If death does not occur in the midst of these symptoms, convulsions not infrequently step in to terminate the distressing state of affairs. There are cases, however, which are of an eclamptic character from the start, convulsions being the principal manifestation, so that we may speak of a convulsive type of infantile malaria. It appears chiefly in children with a neuropathic taint. I wish to carefully call attention to the relations which subsist between the eclamptic symptoms in malarious children and the presence of nervous antecedents. First there is temporary quivering of the orbicular muscles of the eyelids and lips, and later come violent spasms of one or many muscles involving one or more limbs. These muscular contractions are repeated at variable intervals or may be persistent. But most commonly we see general convulsions, either tonic or clonic, coinciding more or less closely with the rise of temperature of the body. Convulsions also appear with the picture of classic tetanus, or, more frequently, of simple tetany, of which latter I have seen more than one striking example. In cases of this sort the respiration becomes more and more interfered with, the head becomes congested, the face turns red, the eyes roll or remain fixed, the child makes from time to time an abrupt, hissing respiration. Auscultation of the heart reveals tachycardia or embryocardia. In the majority of cases this tetanoid form is a sign of extreme gravity, denoting an advanced degree of infection, and one rebellious to the most energetic measures, especially if one has not acted from the very first moment.

Although the so-called pernicious accidents of infantile malaria may appear suddenly, and may alone constitute the first appreciable manifestations of the infection, it is the rule to see these symptoms preceded by others which are more or less obscure—such as the change of character, the nocturnal restlessness, insomnia, gastro-intestinal troubles, pallor, loss of flesh, and, finally, very slight attacks of fever which may either pass unobserved or be attributed to insignificant reasons —such as teething. Nevertheless it must not be thought that these foregoing symptoms are presented very closely in ordinary cases; on the contrary these isolated manifestations of paludism in the very young are observed much more infrequently than would be supposed. It is common to see them associated with symptoms of secondary infections, such as cerebro-spinal meningitis, bronchitis, broncho-pneumonia, pneumonia, pleurisy, pericarditis, enteritis, entero-colitis, and nephritis, which are very commonly added to the direct effects of malarial infection and have to do with the invasion or multiplication of minute pathogenic organisms which may either have pre-existed within the affected organs in a state of hibernation or have been derived from the external world, and which in either case have found the organism debilitated by the general primitive infection of malaria, a suitable breeding place. Streptococci, pneumococci, and the bacillus coli may all play an important rôle in the genesis of these complications. It is understood that these secondary visceral inflammations generally pursue a very grave character and resist the therapeutic remedies which are administered for them. I have no intention of giving a separate description of each of these complications, but will remark that they often coincide with the irregularities and oscillations of the paludic fever which tends to make the diagnosis very difficult. This fact did not escape the notice of Torti, who described the bronchial catarrh and pneumonia associated with paludism. He has recorded a hybrid type of these diseases, which he compares with the product resulting from the union of two animals of different species. I had perfectly well understood this fusion of symptoms which results from the conjunction of two distinct diseases.

One of the manifestations attached to inflammations of the respiratory apparatus, to wit: the fever—must be modified by the double infection, the special symptoms of each disease being marked. The endocardium may be attacked in the course of a severe attack of malarial fever, but this is relatively more common in little children of over two years of age.

Pio Blasi, who has written an interesting memoir upon this complication, which was read before the Academy of Medicine at Rome (Della Endocardite Palustre nei Bambini, Roma, 1879), relates eleven cases of endocarditis as observed in a material of 200 children treated for malarial fever at the children's hospital (Hospital of the Infant Jesus), in whom he found evidences of cachexia associated with fever of the continuous or irregularly intermittent type. In every one of these cases mitral insufficiency was to be noted, while in four instances the aortic orifice was also involved, in two others there was tricuspid insufficiency, and, finally, in two of the patients the aortic orifice was also involved; in two others there was tricuspid insufficiency, and, finally, in two of the patients the aortic, tricuspid, and mitral valves were all implicated. Before Blasi's work appeared, Marinelli, Pesci, and other pediatrists had noted these cardiac complications in infantile malaria. The researches of Eberth, Birch-Hirschfeld, and more recently of Netter, Grancher, Weichselbaum, Wissokowitsch, Cornil, and Babes' have put beyond doubt the infectious nature of endocarditis and its dependence upon staphylococci, pneumococci, streptococci, etc.

The malady is therefore secondary, as are many other virulent affections. The coincidence of pericarditis, which is much more rare in infantile malaria, could admit no other origin. The visceral congestions which result from the malarial infection may be invoked as furnishing favorable conditions for these secondary inflammations. This appears to be especially demonstrable in connection with affections of the renal parenchyma, in which the glomerular circulation is retarded, favoring the arrest of the germs as they are carried along the blood-stream. Bouchard, on the other hand, states that the inflammatory process in the kidney does not result exclusively from the accumulation of infectious elements in the vessels or in the parenchyma of the organ, but may also be caused by the passage of the materies morbi into the uriniferous tubes, and by direct contact with the epithelial lining of the glomeruli. This should be the rationale of the secondary nephritis of malaria, not differing sensibly from the renal complications of eruptive fevers—puerperal and typhoid fevers, erysipelas, etc. Acute nephritis does not seem to be very infrequent in children with paludic fever. The studies to which I have devoted myself (since 1882), upon the urinary troubles of malaria, appear to assure me that albuminuria exists more frequently than one would naturally expect. Glycosuria, as described by Verneil and Mosse, occurs with great infrequency. Finally, when paludic cachexia follows acute malaria, or even when it succeeds to chronic malaria, we often find phosphaturia, which may be of a high degree, as well as peptonuria, which may also attain a marked degree of intensity. When one sees a little child affected with paludic fever, who presents edema of the lower extremities and eyelids, the urine must be forthwith examined, although this is not always easy of execution in nurslings. The prompt and marked depression of the organic resistance which predisposes to paludic infection and also favors the development of another kind of secondary complication, perhaps the most frequent and precocious of all—I refer to the enteritis and colitis, which usually declare themselves in a most violent fashion and which may obscure or mask the picture of the original disease in fixing the attention of the inexperienced practitioner too exclusively upon the intestinal symptoms. The biliary hyper-secretion, so common at the outset of the disease, would readily explain the change in the color of the stools, but chemical affections of the prima via soon lead to a lienteric diarrhea, especially when the dietary of the patient is improper. Those germs which are normally present in the intestine, among which I may mention the coli-bacillus, multiply rapidly and take on a high degree of virulence, and in addition to the direct effects which they produce on the intestinal mucus, they cause secondary intoxication by the agency of their elaborated products. Recent bacteriological investigations show that the bacillus coli may emigrate from its primitive locality and arrive at remotely situated parts, such, for example, as the pleural cavities. It is thus easy to understand that a secondary entero-colitis may be able to aggravate the condition of the little patient already compromised by malaria. The loss of organic resistance is then brought about with extreme rapidity until it becomes almost void.

Before dismissing the subject of symptomatology of malaria in young children, we must briefly touch upon certain marked forms which are hardest of all to be understood. Certain abortive, atypical and crude forms are frequently to be seen in the very young, and the practitioner must be on his guard in order to recognize them. The fever is often incomplete; only one of the three stages may be present. Sometimes there is a peripheral hypothermia, sometimes we find more or less profuse sweating, partial or general. These phenomena may occur regularly or irregularly. They may often escape recognition for a certain time, and, as a rule, are not correctly appreciated until after some time has elapsed. The insomnia, often rebellious to the action of all hypnotics, may be the only apparent manifestation of the disease. The child who appears to be well, and who during the day is gay and composed, may often exhibit opposite qualities at nightfall, and may be quite unable to sleep. These sleepless nights may extend over a long period, until after a minute investigation the true nature of the insomnia becomes revealed. On the other hand the disease may be manifested by somnolence, or prolonged sleep. One must distrust any unusual tendency to sleep in the middle of the day. In some cases the malarial attack will chiefly be manifested by neuralgia, either peripheral or visceral, among which may be mentioned *enteralgia*, which is common among the new-born. These colics often come on periodically, and may commence with fever, swelling of the abdomen and constipation. These enteralgic crises are often very acute, and then lead to collapse, with hypothermia and profuse perspiration. This marked form of paludism is often overlooked, because, as a rule, the colic is wrongly attributed to petty causes.

In these cases if some adequate error of diet is not in evidence, we must suspect malaria. It is by no means rare for the paludism to be manifested solely by ocular neuralgia.

Wehle, Mackenzie, Gueneau de Mussy, Galeszowski and Levrier have described cases of this sort, and the remedial action of quinia is often surprising. I have often seen neuralgia of the fifth pair affecting the ciliary arteries, and leading to a hyperæmia of the palpebral and bulbar conjunctiva, with intense lachrymation and photophobia. As a rule these ocular manifestations occur periodically, and coincide at times with a slight febrile movement. Sometimes they cause blepharospasm. While, as a rule, they are unilateral, they occur at times symmetrically. The prompt and decisive action of quinine in these cases does but confirm the diagnosis of paludism. The disease may at times be located in the medulla oblongata, and cause manifestations of a menacing gravity. We must allude here to the dyspnœic crises, which simulate spasm of the glottis, and foreign bodies in the trachea, etc. These paroxysms may often be the sole manifestation of the malarial intoxication, while in other cases a febrile movement, previously recognized, co-exists, and gives the disease its proper *cachet.*

For example, there may be a fever of remittent, irregular type, apparently benign; all at once a paroxysm of asphyxia with orthopnœa supervenes, the face becoming livid, the cervical veins swollen, the mouth open and head drawn back. Examination reveals nothing wrong with throat or lungs. Thermometry shows a sharp febrile attack. We have here an example of true pernicious fever, with bulbar localization, probably a congestive manifestation. These attacks of asphyxia may pursue an alternating course like the fever. My eminent friend, M. Jules Simon, has reported some curious observations on masked malaria, as expressed in notable attacks of dyspnœa, relying upon the curative action of quinia to confirm the diagnosis.

These masked cases of malaria may also take the form of hiccough, vertigo, syncope, etc. I remember the case of a little girl, two years old, who was suddenly attacked by syncope, during which I was able to make out a rapid and considerable enlargement of the spleen, with fever, all these symptoms subsiding after an injection of quinia.

Finally, I must not omit to mention the manifestations which may appear on the skin and mask all the characters of the paludic fever, presenting the picture of an entirely different affection. I wish to speak of a dermatosis which has to do directly with the miasmatic poison, observed and noted for the first time at Bucarest by Obédénaro in 1869, and studied more at a later period by my lamented friend, Boicesco, in a very interesting memoir which appeared in 1890 in the *Revue Roumaine de Médicine*, where it is carefully described under the name *erytheme noueux palustré*. Boicesco, who reported the histories of 22 cases of this malady—of which one belonged to Obédénaro, while all the rest came from the service of Prof. Sergin in the Children's Hospital at Bucarest—stated that the disease had never been observed save in young children, and I for my part can agree with my Roumanian confrére, because I have never seen this affection in the adult. According to Boicesco's opinion, this eruption had never been beheld save by a few Roumanian practitioners, those in fact who had been able to attend as students the clinics of Prof. Sergin, who was the incumbent of the children's clinic in the Bucarest University. I was the first to recognize and describe this disease in Brazil (Moncorvo. Erythéme noueux palustre. Lectures delivered at the General Policlinic of Rio de Janeiro, Paris, 1890—also *Gaz. hebdom. de méd. et de chirurgie*, Paris, 1892). The four cases which I have had opportunity to study, taken in conjunction with those of Obédénaro and Boicesco, give a total of 26 observations relating to children, whose ages varied from 3 months to 11 years. The majority of the affected children were females. The eruption takes the form of nodes or placques, occupying the thickness of the derma, and projecting more or less above its level. The color of the lesions varies from vivid red to yellowish-red. The seat of predeliction is the anterior aspect of the legs and upper arms, but the efflorescence may also appear on the fronto-temporal region, the calves and buttocks. The lesions are the seat of vivid burning sensations, and the slightest touch is painful. The majority of the nodules are of a circular outline, but some are irregularly ovoid; the size also varies greatly, the limits being represented, respectively, by hazel nut to large areas 4 inches in diameter. They may be isolated, or confluent. The size also varies to some extent with the temperature. In the febrile stage they become more voluminous, while during the afebrile intervals they are again retracted. The redness and burning sensations are also influenced by these changes in the volume.

This disease may last from two to four weeks, running parallel with the course of the fever. When the lesions finally disappear, the erythema gradually assumes the picture of ecchymosis. The efflorescence is followed by desquamation. The origin of this nodose erythema is probably to be found in the vaso-motor system, the disturbance of which results in a fibrinous exudation and cellular proliferation such as occurs in phlegmasia in general. During a febrile paroxysm, the redness and prominence of the nodes are accentuated. The progressive parallelism between the efflorescence and fever, the relationship with malarial infection, the prompt amelioration or cure which follows the exhibition of quinine, put the malarial nature of this dermatosis beyond doubt.

There is also occasionally seen a simple erythema, which follows a congestive chill and accompanies the consecutive febrile movement. In other instances each thermic accession will be followed by an outbreak of urticarial wheals, which may either be discrete or confluent, and which disappear during the afebrile period. We have had many such cases under observation in Rio.

The malarial cachexia often results from severe attacks of the intermittent fever, but in some instances is present as a primary manifestation. Before any definite accident of the disease appears, the child begins to lose flesh, perhaps as much as 300 g. in a day. After a careful examination of the blood—which it would be very difficult to complete without repeated tests—the malarial nature of the insidious malady becomes evident. If the diagnosis cannot be made at the start, and further observation is required, the child is seen to become paler and paler, while the skin assumes a yellowish, waxen hue; the face becomes puffy, the child tires readily, is morose and sad, does not play, prefers solitude and repose, and walks with a slow, uncertain gait. During repose his muscles become flat, flabby and soft. This is the so-called malarial phthisis. The liver and spleen, one or both, are hypertrophied. I have had the opportunity of seeing cases of cirrhosis of the liver of malarial origin. The digestive troubles become permanent, the appetite is lost, the evacuations remain clammy and fetid, and gastrectasis is then usually present.

It has long been observed in Brazil that children with the paludal cachexia have large bellies. Even the laity in the interior of Brazil have had their attention attracted to this fact. Researches undertaken by myself in my clinic in 1882 enabled me to demonstrate the fact that the stomach is dilated in these cases. More recently I have learned that other portions of the gastro-intestinal system may undergo a permanent passive relaxation, which amounts to the same thing; this is especially true of the colon. One of the results of this entero-paresis is the rectal prolapse, so often to be seen in my service. Urinary troubles announce the sluggishness of nutrition, and we often see peptonuria and increased amount of urea and phosphorus. In the majority of these cases indicanuria also appears. The psychical condition of the patient sustains the same degree of injury as does the physical. The intellectual development suffers at times to a remarkable extent, so that we see develop a sort of idiocy or cretinism, already noted by Burdel.

It is not always easy to recognize these malarial accidents. To do this successfully one must be *au courant* with the different manifestations of the disease, especially as they occur in very young children; otherwise grievous errors will be committed, because a correct diagnosis often means a saving of life. The principal features of the disease must always be borne in mind, viz., insidious onset of disease without appreciable cause; alteration of the health of the child, due apparently to digestive troubles ascribed to trivial agencies; fever, rarely intermittent in type, but rather remittent or subcontinuous, the evolution being irregular; paroxysms of fever preceded by hypothermia of the extremities, and sometimes—but not always—followed by partial or general sweating; disparity between the child's condition and the apparently trivial nature of the disease; enlargement of liver or spleen, or both; finally the locality and surroundings of the patient, and the meteorological conditions.

Any fever of irregular course, without any notable antecedent to account for its presence, when occurring in a young child, must give rise to suspicion of the existence of paludism. Any fever whatever, unaccompanied by some organic lesion able to explain its presence, must be likewise regarded with suspicion. Nothing could be more true than the declaration of D'Espine and Picot, to the effect that in countries where intermittent fever exists endemically, one must suspect the existence of paludism whenever a child is stricken without apparent cause by a febrile movement with remittent attacks.

Jules Bonvier asks very pertinently, "How many cases of convulsions, of gastro-enteritis, gastric fevers, etc., and especially those which occur during dentition, have had their malarious nature overlooked?" This mistaken diagnosis has cost the lives of many little ones. In short, in countries such as ours, where paludism is endemic, we cannot be too vigilant; and we must endeavor to rigidly exclude malaria in all cases where it might possibly exist. The various symptoms which may be associated with malaria have all been carefully described, and it only remains to add that the blood examination may fail to aid in the diagnosis, because the pèriod of the chill (at which time the parasite should be sought) is absent or inconstant in very young children.

The infectious, tuberculous fever, said by Meniere, Landouzy and others to occur in young children, although a rare form of tuberculosis of infancy, presents considerable analogy with the very acute form of paludic intoxication. The differential diagnosis, always difficult, is rendered doubly so in countries where paludism is endemic. In this very acute bacillary infection one sees appear a high fever, with marked weakness and typhoid symptoms, more or less rapid emaciation and dryness of the skin, dry and coated tongue, intense thirst, vomiting, swelling of the abdomen, profuse and fetid diarrhea and tumefaction of the liver. Examination of the respiratory passages shows dullness over the base of the lungs, superficial breathing, or subcrepitant râles; symptoms which do not sufficiently explain the general condition. Death, the usual termination of this affection, occurs in the course of a few days.

I may add that this form of acute tuberculosis of childhood may exhibit the clinical picture of typhoid fever, the so-called typho-tuberculosis, with inevitable termination in death. In this affection the fever is always continuous and associated with marked disturbance of the digestive tract. The clinical problem is even more observed by the fact that malaria may attack a child who has latent tuberculosis, the evolution of which may be thereby hastened. In these cases quinine-therapy at the start may throw some light on the disease, while it is not contra-indicated in tuberculosis. I must not omit to say that the chronic form of tuberculosis may be generalized with simulation of malaria, long intervals of apyrexia being present. I have the opportunity of daily observing children who attract attention by their skeleton-like emaciation, by the dryness and pallor of their skins, and their discomposed features, and who, despite an exaggerated appetite, become progressively worse. In cases of this sort the diagnosis is not so difficult. We may always find enlargement of the peripheral ganglia (micropolyadenopathy); while an attentive examination of the lungs will show dullness of one or both apices, with harsh breathing, or in other cases diminished or absent breathing. It other cases it is the bases rather than the apices which are attacked. In a considerable number of cases we have crises of tracheo-bronchial asthma accompanied by adenopathy, which is revealed by physical exploration. In children at an early age we usually find at the end of a longer or shorter period, a febrile movement of a daily intermittent or remittent type, which is quite rebellious to antipyretic agencies, and appears to be related to meningitis. The increasing progress of athrepsia in the presence of a voracious appetite, the signs furnished by examination of the thorax, and the symptoms which point to meningitis will enable us to differentiate this generalized chronic tuberculosis from malarial infection. Yellow fever, less frequent in little children than one would imagine, may be confounded with malaria at the outset. The yellow fever, however, usually appears with the picture of an exanthematic infection. The temperature rises suddenly and to a high degree, the peripheric capillaries are dilated, giving a reddish tinge to the skin followed later by the yellowish hue. The patient shows marked agitation followed by extreme and constant epigastric pain; vomiting soon supervenes, at first bilious and then black, to which are added the symptoms of renal insufficiency. This condition could not ordinarily be confounded with malaria; but it is otherwise when the latter infection precedes or coincides with the symptoms of amaryllic typhus, and in these cases it is necessary to make a most careful effort to find the hematozoon in the blood. Albuminuria is regarded in Brazil as almost certain evidence of yellow fever in making a differential diagnosis, but this opinion is erroneous, because I have found albumen in the urine in both acute and chronic malaria.

Another affection which may have to be distinguished from malaria in childhood is ankylostomiasis, which, while of rare occurrence in Rio, is common enough in the country. In this affection we have pica or the craving for unnatural food, a symptom not present in any other of the diseases which have been under consideration. Next in frequency we have intense gastralgia or enteralgia, which is nearly continuous. The parasites may be recognized in the stools.

With regard to the prognosis of malaria in childhood, it is enough to say that once the disease has obtained a foothold, no matter how benign its appearance, the practitioner must never be off his guard, because it is an insidious malady and one which abounds in surprises. The younger the patient the greater must be our vigilance. By assuming this attitude the practitioner will obtain better results, because there will be no loss of precious time in applying active therapeutic procedures. As a rule, malaria, even in childhood, is inclined to yield to the specific treatment if begun in time and proportioned to the intensity of the disease. It goes without saying that the need of an early diagnosis is imperative.

(*To be continued.*)

CONGENITAL CLUB FOOT—EQUINO-VARUS.

Henry Ling Taylor, M.D.,
New York.

THE cut shows the plaster casts of a baby's feet taken when the baby was two months old, and the feet of the same child ten years old, after orthopedic treatment.

The object of treatment in congenital club foot is very simple; it is to thoroughly correct the false position of the foot—to over-correct it, in fact—and then to keep it in the over-corrected position until growth has molded the parts and restored the proper balance between the muscles acting on the foot—in other words, until there is no further tendency to recurrence of deformity.

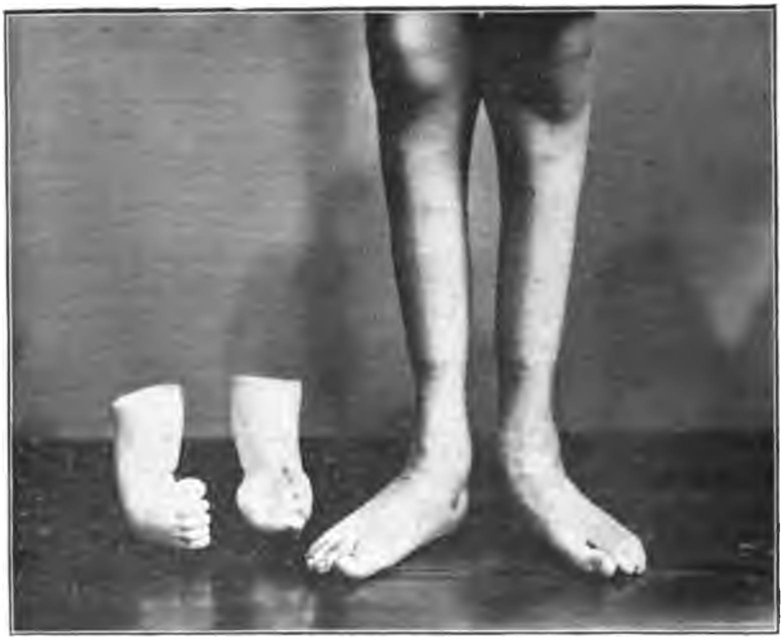

FIG. I.

The means to be employed to these ends are a secondary matter, but unless we actually accomplish what we set out to do, namely, to over-correct the deformity, and to hold it over-corrected for a year or two, the result will be more or less imperfect.

The foot may be slowly molded by continuous leverage applied by means of a brace or plaster dressing, and the better plan will be to correct first the lateral deformity and afterwards the equinus.

Fig. 2 shows an apparatus for correcting club foot by continuous leverage from the inner side, and for holding it after correction. There is a screw-stop at the ankle, and the cut shows the foot dropped, as applied to reduce the varus deformity. A heel strap attached to adhesive plaster on the leg prevents the heel from rising when the foot is flexed.

If correction by these means comes to a standstill, ether should be given and the foot forcibly manipulated. If this is not enough, resisting bands may be divided.

The structures most frequently requiring division are the heel cord and the plantar fascia. The foot is to be put up in the over-corrected position at once, and not, as we used to be taught, in the deformed position and stretched out later. Such means have been found sufficient to correct nearly all cases under 6 years of age. The extensive cutting operations and operations on bone are rarely required, except in the older and inveterate cases. I remember seeing a child brought to the table of one of our large hospitals for excision of the astragalus for club foot. The deformity was marked, but it was found that the astragalus had already been removed. Any and all operations, even where needed, as they often are, are but steps or incidents in the treatment, and if the feet be not over-corrected, and so held for a long time, they will prove inefficient. This matter of holding the feet is often more difficult than the operating.

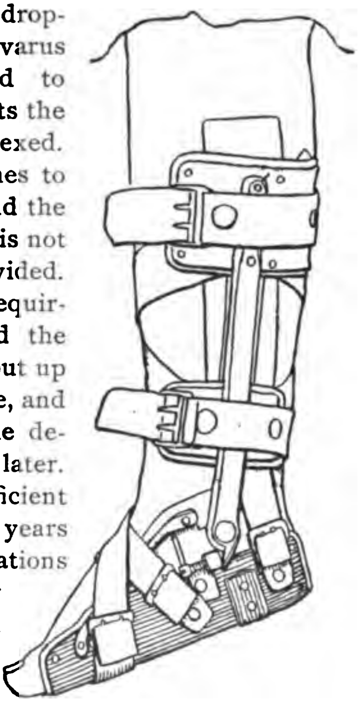

FIG. II.

71 West Fifty-fifth Street.

MORBUS CÆRULEUS.*

By C. C. Mapes,
Louisville, Ky.

THE comparative infrequency with which so-called Blue Disease is encountered and recognized during life, the few discoveries and the paucity of reliable literature on the subject, render reports of isolated cases of more than ordinary interest, especially when such reports emanate from reliable and responsible sources.

According to one of the latest authorities, the condition is essentially "a blue color of the skin, resulting from a congenital malformation of the heart, or from some defect of the pulmonary circulation, by which the venous blood is not wholly oxygenated." That much seems settled, but which of the two factors acts as the primary cause, the *fons et origo mali*, has not yet been made clear, i.e., whether primarily a malformed heart or a defective pulmonary circulation—non-closure of the oval foramen or other cardiac malformation, or inefficient lung function.

A brief consideration of the anatomical aspect is not devoid of interest. The writer, not having had an opportunity to witness sufficient post mortem examinations, in which this condition was present, to enable him to substantiate or gainsay deductions which have met with more or less general acceptance in regard to the morbid anatomy, the value of his personal opinion is practically nil. A standard text-book of the present year treats of the anatomy of *morbus cæruleus* in the following language: "The foramen ovale, though ceasing at once to permit the passage of blood after birth, does not become actually closed till a considerable time afterward. The closure takes place gradually, in the course of ten days or more, by the union of the fore part of the valve with the contiguous annulus of the foramen, but not infrequently the latter, at its upper part, remains as a permanent cleft communicating between the auricles. Sometimes in the first year of infancy a wider aperture continues, and permits the flow of blood from the right into the left auricle, giving rise to the condition known as blue disease, or morbus cæruleus."

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* Including excerpt of a case reported recently by Dr. W. B. Gossett, Instructor in Obstetrics, Louisville, Ky.—*Louisville Medical Monthly*, Vol. IV., No. 8.

Following is an abstract of Dr. Gossett's case, which is of especial interest, (1) because of the extreme degree of the cyanosis; (2) that it was accompanied by ulceration of the superfices of the extremities; and, (3) that recovery resulted in a condition almost universally regarded as quickly fatal:

* * * * * * * * * * *

Mrs. B., white, November 7, 1896, gave birth to a girl baby, weighing seven pounds, and perfectly formed; vertex presentation; labor normal. Two ulcers were observed on the child's left leg at birth, one on under surface of left nates, the other on outer side of ankle extending half way to the knee. Nine days after birth it was noticed that the child's face was turning purple; gradually the color deepened to a slick blue-black, and spread over the entire body. Lips, gums, tongue, fingers and nails were of the same blue-black color. Inspecting the child's mouth, it appeared as if he were "looking into the blackest of holes." A papular eruption developed on the right cheek, which disappeared with the blue-black color. Around the two ulcers were large pimples, first containing a watery secretion, and later pus; no eruption on left cheek nor right side of body. The dark blue-black color lasted four days, then gradually disappeared. General health and appetite good, respiration normal; child slept nearly all the time—it was drowsy, due to non-oxygenation of the blood. Feces natural in color up to the last two days of the blue-black period, then turned to a copper color, lasting two days; at this time (making the end of the four days of the blue-black period) feces changed to a pure green color, the skin began to turn lighter, and in three days was cf its natural color, as was also the feces. The ulcers did not begin to heal until the child had turned to natural color. Healing was complete in fifty-two days from birth.

Treatment.—Whiskey and quinine during the entire period; no attention was paid to the position of the child; mother was allowed to take it up to nurse, etc.; applied carbolized washes and bismuth to the ulcers; later used protonuclein special powder.

History of both parents good. The child made a perfect recovery, and is today the picture of health.

* * * * * * * * * * *

Hunter, as early as 1783, called attention to cyanosis of the newborn, and advanced the view that there was narrowing of the pulmonary artery and defective septum ventriculorum in all such cases. This view met with rather general acceptance as the correct explanation of the primary defect.

Stillé concluded that cyanosis may occur without the admixture of venous and arterial blood, and mentioned five cases in which no means of admixture existed; again, that complete intermingling of venous and arterial blood may take place without producing cyanosis.

Morgagni (1682–1771), was probably the first to accurately describe a case of blue disease (cyanosis), which case occurred in his own practice, and attributed the phenomenon to a general congestion of the venous system, due to obstruction of the pulmonary artery; although Hippocrates mentioned the condition at a much earlier date.

Dr. Davis Hosack, of the University of New York, reported in 1797 several cases of "The Black or Livid Color of Infants," proceeding from an "imperfect closure of the foramen ovale." In two cases perfect recovery is said to have taken place under treatment instituted by this eminent professor, which, although it was apparently considerably in advance of anything that had previously been suggested, appears extremely ridiculous in the light of present knowledge. As a matter of comparison I abstract his two successful cases: In the first he had in vain tried evacuations, and afterwards anodynes, upon the principle of the disease being of a spasmodic nature. He then had recourse to a stimulant mode of treatment, the remedies not having been attended with any relief or advantage. A blister was applied upon the breast, two others behind the ears, cataplasms of mustard, rye-meal and vinegar, were put to the soles of the feet, the whole body was bathed with warm brandy, and afterwards with a diluted solution of ammonia; and, from time to time, an attempt was made to give the child a spoonful of wine whey; but all these means produced no beneficial results. After six hours had elapsed, it became more feeble, respiration was suspended for a greater length of time than in the commencement of the disease, and the circulation became less vigorous. These, with greater coldness of the extremities, excited great alarm.

The doctor had frequently employed, in the latter stages of malignant fevers, and diseases of great debility, a stimulating bath, prepared with the bark of cinchona and spirits; and, as a last resort he determined to give it a trial in the present case. He therefore directed four ounces of this bark in powder to be boiled for a few minutes, in about two gallons of water; to this, when fit for use, a pint of Jamaica spirit was added. When it was cooled to a temperature, rather above that of the body, the child was immersed in it up to its neck; and to render the bath more stimulating, a small quantity of the diluted solution of ammonia was added from time to time.

A very apparent and favorable change took place in a short time ; respiration was perfectly restored while the child remained in the bath; the circulation became vigorous and active, the countenance resumed its lively hue; the power of swallowing, which had been lost, was restored, and in every respect the child manifested symptoms of relief. It was now removed from the bath, wrapped in warm dry flannels, and put to the breast. This it took with eagerness, and it remained composed and free from complaint for about half an hour, at which time a fresh paroxysm came on. The bath was employed a second time, and repeated during one or two other paroxysms with the same relief as before. These, however, were of shorter duration, and returned after long intervals. The child at length recovered, and was restored to perfect health.

In the second case, when the doctor visited the child, its respiration was completely suspended, the face of a dark bluish color, the circulation weak and very irregular, and the extremities were almost cold. He instantly directed the bath to be prepared in the same manner as directed in the first case, and, when ready, the child was immersed in it for about fifteen minutes. Its respiration soon became regular. In about half an hour's time the fit returned, but was of short continuance, and less violent. The bath was employed a second time, which completely removed all complaint.

In a Treatise on Cyanosis, by Gintrac, of Bordeaux, published in 1824, the following results have been deduced from 53 cases analyzed by him: In 33 instances the foramen ovale was open; in 22 the aorta arose from both ventricles; in 12 the pulmonary artery was contracted; in 14 the ductus arteriosus was open; in 5 ventricular septum imperfect; in 5 pulmonary artery obliterated; in 4 a single heart, i.e., only one auricle and ventricle; in 4 the aorta arose from the right, and the pulmonary artery from the left, ventricle (foramen ovale open, and occasionally also the ductus arteriosus); in 1 the aorta obliterated.

Of 72 cases collected by Stillé, cyanosis existed at birth in 40; of these 17 died within a year; 10 between the years of one and ten; 10 between the years of ten and twenty; 3 only survived the latter period, 1 of whom attained the age of fifty-seven. Out of 62 of Stillé's cases, the pulmonary artery was contracted, obliterated or impervious in 53.

Many cases of congenital cardiac malformations have been recorded, proven by post-mortem examinations, where cyanosis was not a symptom during life.

According to Thomas "it sometimes happens that immediately after birth the face and neck of the infant put on a livid or black appearance, the lips become purple, and the breathing short; which symptoms either go off soon again or terminate in death.

"They are to be attributed either to an imperfect closure of the foramen ovale, or some malformation of the heart or lungs, or to vessels having imperfectly undergone those changes which are necessary for all animals who breathe common air."

Keating treats of cyanosis as follows: "Over 90 per cent. of the cases present, in a greater or less degree, lividity of skin, indicating the circulation of imperfectly ærated blood in the superficial capillaries. So distinctive is this symptom of congenital cardiac defect that the term 'morbus ceruleus' has been applied to it, and 'the blue disease' is a synonyme for congenital heart affection."

Morrison, in an analysis of 75 cases of congenital heart disease, shows that closure of the pulmonary orifice, and patency of the foramen ovale and the ventricular septum, are the lesions most frequently associated with cyanosis, and concludes that deficient æration of the blood, owing to diminished lung function, is the most important factor. He found the foramen ovale open in 37 out of 46 cases.

To again quote from Keating, "as regards the relative significance of special lesions in cyanosis, closure of the pulmonary orifice and patency of the foramen ovale and the ventricular septum are most frequently associated with it, and conversely, the patency of the pulmonary orifices and the closure of the foramen ovale and the ventricular septum are associated with relative absence or a minor degree of that state; cyanosis, in the majority of cases of cardiac anomalies, appears early, within the first week of life."

As already shown, Morgagni believed the condition was due to a general congestion of the venous system, because of obstructive processes, and Hunter attributed the discoloration to the admixture of venous and arterial blood.

Pre-existing diseases of parents, as syphilis, rheumatism, etc., have been claimed by some observers to have an influence upon the production of cardiac malformations in the infant and consequent cyanosis, but so far as can be ascertained no accurate records covering these features exist, so at best the influence thus exerted is an unknown quantity.

Gintrac claimed that cyanosis showed no hereditary tendency; that pregnancies, during which defective infants were developed, were without noticeable phenomena, and confinements of mothers were in every way normal. Osler states that the lividity in the majority of cases appears early, within the first week of life, and may be general or confined to the lips, nose, and ears, and to the fingers and toes. In some instances, he says, there is in addition a general dusky effusion and in most extreme grades the skin is almost purple.

Gossett (loc. cit) says it is known that cyanosis is produced by non-oxygenation of the blood, but what is the primary cause? In his opinion it may be either one or a combination of the following:

1.—Cardiac malformation, non-closure of the foramen ovale, is no doubt the most frequent cause.

2.—Deficient oxygenation of the blood due to diminished lung function.

3.—Venous stagnation of the whole venous system, thereby causing deficient oxygenation.

He states further, that consulting the literature of the subject he was surprised to find so little written, and no case recorded as pronounced as the one covered by his report.

The age at which death took place in 159 cases of cyanosis, tabulated by Aberle, was as follows: 57 died before the end of the first year; 108 died before the age of eleven years; 30 between eleven and twenty-five years; and of the remaining 21, only 5 lived more than forty-five years.

In a series of 186 cases, collected by J. L. Smith, 67 died before the close of the first year; 121 before the age of ten years; only 24 survived the age of twenty years, and 4 the age of forty years.

Of 138 of Smith's cases, lividity was observed before the end of the first week after birth in 97. Of the remaining 41 cases it commenced in from two weeks to forty years (one case over forty).

Of 180 cases collated by Aberle, two-thirds were males; of Gintrac's cases, there were 28 males and 16 females; Stillé's 41 males and 31 females; in 144 of the cases collected by Smith, 78 were males and 56 females. Of 207 deaths in New York City from cyanosis, in five years, 117 were males and 90 females; in England, for two years, 418 males and 273 females. The proportion of deaths from cyanosis for varying periods of time (two to ten years), in comparison to all other causes, is estimated by Smith as follows: New York City and Brooklyn, 1 to 436; Kentucky, 1 to 2,469; South Carolina, 1 to 5,018; Massachusetts, 1 to 1,136; London, 1 to 755; England (including London), 1 to 1589; rural districts of Monmouth and Wales, 1 to 5,578.

The following statement appears in Smith's work on Diseases of Children: "Cyanosis is in reality a blood disease, its pathogenical state consisting in a deficient oxygenation of this fluid, or in an excess in it of carbonic acid, and probably of carbonaceous products. It should be placed in the same category with leucocythemia and melanemia." This author collated and analyzed 191 cases in 1863, published in transactions of the New York Academy of Medicine for that year.

According to Smith, the malformations which give rise to cyanosis are numerous, and his table below shows their character and relative frequency:

		No. cases.
1	Pulmonary artery absent, rudimentary, or partially obstructed	97
2	Right auriculo-ventricular orifice, impervious or contracted	5
3	Orifice of the pulmonary artery and the right auriculo-ventricular aperture, impervious or contracted	6
4	Right ventricle divided into two cavities by a supernumerary septum	11
5	One auricle and one ventricle	12
6	Two auricles and one ventricle	4
7	A single auriculo-ventricular opening; inter-auricular and inter-ventricular septa incomplete	1
8	Mitral orifice closed or contracted	3
9	Aorta absent, rudimentary, impervious or partially obstructed	3
10	Aortic and left auriculo-ventricular orifices impervious or contracted	1
11	Aorta and pulmonary artery transposed	14
12	The cavæ entering the left auricle	1
13	Pulmonary veins opening into the right auricle or into the cavæ or azygos veins	2
14	Aorta impervious or contracted above its point of union with the ductus arteriosus, pulmonary artery wholly in part supplying blood to the descending aorta through the ductus arteriosus	2
	Total	162

As to the causes upon which depend malformations which, in their turn, give rise to *morbus cæruleus*, although the condition has been studied directly, indirectly, theoretically and otherwise for the last two hundred years, we are still in the dark. It is a little surprising that so great an authority as J. Lewis Smith makes this statement: "Mothers sometimes attribute the malformations, and probably correctly, to strong mental impressions felt during utero-gestation," and cites cases in substantiation thereof where mothers were frightened by various accidental and other means *during the last two or three months of pregnancy*.

If there be anything in the theory of maternal impressions in any case, does not the gentleman err in assuming that an effect could be thereby produced upon the fetus during the latter months of utero-gestation?

The foregoing, as will be readily observed, is not based upon personal observation, but upon statistical information gleaned from available sources; some paragraphs have been quoted entire, others excerpted, small portions only being utilized, and still others epitomized.

BELLADONNA IN THE BRONCHO-PNEUMONIAS OF CHILDREN.

By D. A Hodghead, A.M., M.D.,

Professor of Obstetrics and Diseases of Children in the College of Physicians and Surgeons of San Francisco, and Associate Editor of the *Pacific Medical Journal.*

IN the fall of 1898, I was called to visit a baby, aged eighteen months, that, upon recovering from an attack of measles, had been taken with a broncho-pneumonia. This disease, when I first saw the child, had been running for three days, and the child's condition was serious. Another physician had been employed and dismissed. The temperature was ranging from 101° to 104° F., pulse 150 to 170, and respiration 60 or more to the minute. The breathing was labored, there were coarse moist râles all over the chest, and the rattling of the secretions in the lower branch could be heard several feet away. There were also some consolidated areas of lung tissue, over which might be heard the finer moist subcrepitant râles. Cough was almost incessant. In short, the case was one of broncho-pneumonia of a decidedly active type.

The usual routine treatment was employed. Laxatives had already been administered, and these were, therefore, omitted by myself. Slightly stimulating and mildly irritating applications were made to the chest and poultices applied. Milk was used for nourishment, small doses of whiskey for stimulation, quinia sulphate and sponging for the temperature, and carbonate of ammonia in syrup as a stimulating expectorant. I saw the child twelve hours later, and there was no improvement. Slight changes were made in this treatment, as symptoms seemed to indicate. Another twelve hours passed, and the child's condition remained as serious as before. The remedies were administered more frequently, or in larger doses, and at the end of the next twelve hours the child was plainly in a more serious situation than it had ever been before. Pulse weaker and more rapid, respiration faster and more shallow, the child's strength waning, the lungs and tubes filling up with the abundance of the secretion. It was plainly evident that if this group of symptoms continued for a few hours more the child could not survive, and I determined upon a complete change of tactics.

All former medicines were withdrawn, poultices removed, and the child wrapped in soft, loose clothing that would neither interfere with respiration nor irritate. Water was given instead of milk. The room was kept at an even temperature, and the atmosphere not surcharged with moisture. One-tenth grain of the mild chloride was given every hour, with directions that it be continued until the bowels moved freely, and every hour there were given, alternating half-hourly with the mild chloride, two drops of tinc. belladonna. In twelve hours there was a marked improvement. Every serious symptom had in a degree abated. The bowels had moved slightly, and the calomel was continued. The belladonna was given in drop doses every hour. At the end of twenty-four hours after this treatment had been begun, the bowels had moved several times freely, and hence the calomel was discontinued. The temperature had fallen to 100°; the child was breathing 35 times a minute; the respirations were deeper and less laborious; all rattling in the larger bronchi had disappeared, and the moist râles had become few and feeble; the pulse was slower and stronger; the cough much less frequent and less severe; the child slept and took nourishment. The belladonna was continued in drop doses once in two or three hours, until the belladonna eruption was well marked over the entire body, after which it was gradually withdrawn. From this time on the child made an uninterrupted recovery.

Realizing that broncho-pneumonia was a very dangerous disease, more fatal even than diphtheria, the percentage of deaths from 60 to 80, and consequently that the treatment was unsatisfactory and ineffective, and being impressed with the excellent results secured in this case, I determined to follow up the method. All the standard works on medical literature were examined, and no reference found to the employment of belladonna in this disease in children.

A series of experiments and observations was begun, with the result that twenty-five cases of my own, and five in the practice of other physicians, have been tabulated. In only two of these thirty cases have the combined remedies of belladonna and calomel proved ineffective. The most recent case came under my observation in March, 1899. I was called in consultation to see a baby six months old. The little child had been sick about forty-eight hours. The broncho-pneumonia was plainly evident, and the little sufferer was breathing so hard that the moans and rattling could be heard across the room. It could barely cease breathing long enough to take one swallow, and the cough was incessant. We placed it on one-half grain of calomel every half hour until the bowels moved freely, and one drop of the tincture of belladonna every hour. One and one-half grains of calomel were given, and the belladonna continued hourly for twenty-four hours, then every second hour for a day and a half longer. In twelve hours from the beginning of the treatment; decided improvement was apparent; in twenty-four hours the child was comfortable, from which time it rapidly recovered.

Nothing original is claimed for the use of calomel for these cases. The remedy has been used in this disease many years. By stimulating the emunctories, and by rendering the exudation matter in the lungs and bronchi less dense and less tenacious, as well as by clearing out and making clean and aseptic the intestinal canal, it acts as a valuable ajuvant to the influence of belladonna. It is only insisted that the drug should be given in small doses, and frequently repeated until its cathartic influence is secured.

The belladonna had just such a physiological action as is desirable to be secured in the disease for which it is here recommended.

1st.—In small doses it is mildly narcotic, producing a slightly sedative influence upon the nervous system, and having a tendency to make the child less irritable, and its condition less uncomfortable.

2nd.—It is, in small doses, a heart tonic, raising the arterial tension, and increasing the circulation by stimulating the cardiac sympathetic, and in a corresponding manner depressing the pneumogastric, the inhibitory nerve.

3rd.—It is a respiratory stimulant, influencing in some degree the diaphragm, but more especially does it affect the accessory respiratory muscles, although its action in this regard, it must be confessed, is not yet fully understood.

4th.—Belladonna produces a dilatation of the superficial capillaries, and in a corresponding degree, and in the same manner, relieves the congested lungs. It might also be remarked that it produces an increased secretion of urine and of bile.

5th.—The most important influence, however, which the drug exerts, and the one which bears directly upon the question at hand, is to diminish secretion in the bronchial tubes and pulmonary tissues. The water-logged condition of the lungs is overcome or prevented. Its effects, in such instances, seem almost mechanical, as well as marvelous. The superabundant and dangerous secretions are diminished in quantity, and the threatened asphyxia, which becomes completed when these secretions increase so abundantly that the child is unable to rid its lungs of them, is averted.

The belladonna, to be effective, has required in my hands to be administered in quite large doses, every hour or two hours, until the desired results are obtained. Children, it is well known, are not very susceptible to the drug, and will readily bear it in large doses. Infants a few months old will prove no more sensitive to the same dose than children of five or six years. By administering the drug in frequent doses, any evil effects which it might induce can be readily seen and counteracted, although the writer has observed no untoward symptoms, even when the medicine has been pushed to its extreme physiological limits.

The drug has not been found so effective in the beginning of the disease when the bronchial mucous membranes were dry and congested. It becomes especially applicable when the disease is well developed, and the bronchial secretions are superabundant.

Thirty cases, it is admitted, are not a sufficient number on which to establish belladonna as a specific in this, one of the most frequent and dangerous diseases of infancy and childhood. If it prove in a small measure as effective in the hands of others as it has in mine, where the mortality has been reduced from 60 and 80 per cent. to less than 10, it will be the means of saving as many lives annually as has the anti-toxin treatment in diphtheria.

EDITORIAL COMMENTS

The New Voodooism

The philosophic historian delights to expatiate upon the influence which the inferior and subject race exerts upon the institutions and customs of the superior and conquering people; and, in some cases it really appears that the greater the social and intellectual gulf which separates the races, the greater is the influence exerted by the inferior race. Europeans are fond of pointing out to us how much we have unconsciously borrowed from the red Indian, even our form of government being a copy of the Confederation of the Six Nations. If we have been influenced to such a degree by the red man, who has always held aloof from us, the ways of the black man, with whom we have been closely associated, should have reacted upon us to a still higher degree. As a matter of fact, European musicians of eminence inform us that the only autochthonous music which we possess is of negro origin. For years the white American has preferred to have his minstrelsy served up by "black-face comedians," who delineate the musical side of the negro, and the wide popularity of the banjo, the cake-walk, the "coon-song" and "rag-time" music illustrates the overwhelming influence of the negro upon the white as far as music is concerned. Has the black influenced us otherwise? Has not his superstitious or quasi-religious side inoculated our people in any manner? Decidedly yes. The *natural* religion of the black is Voodooism, and it bears striking analogies to the best known form of faith-healing. If our colored brother's affairs, in health or business, appear to be running counter to what they should, he may consult the Voodoo doctor, who, for a consideration will remove the "hoodoo." This appears to be precisely what the "Scientists" believe and act upon. The negro "hoodoo," like the spell cast upon the "Scientist," proceeds from the envy and malice of enemies. The Voodoo doctor, like the "Scientist healer," is an adept at the absent treatment. He also increases his income by the sale of amulets, charms and the like; and has not the High Priestess of the Scientists reproduced this idea in the sale of souvenir spoons, which the faithful are adjured to buy ? On one point, however, the older cult is still in the lead. The Voodoo doctor, if it is made worth his while, will put a "hoodoo" on the patron's enemy, as well as remove one from the patron himself. "Healers" who use the adjective "Christian," for advertising purposes, might find this idea a stumbling block in practice, but we venture to say that the New York "healer" who recently took hundreds of dollars from a blind man, while pretending to cure him, has the right stuff in him to negotiate this impediment, and turn it to his own profit; and that the New Voodooism may soon parallel the old.

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A Humbug or What?

The daily press has been teeming with accounts of an unknown insect, which attacks man, and menaces the lives of little children. Its depredations began at Washington, and extended northward. It flies by night, yet is not attracted by the light. Silently it enters the open windows of a darkened chamber and inflicts a sting—painless at the time—upon the face of the sleeper, as a rule without disturbing his slumbers. Several hours later intense cellulitis develops, with occasional sepsis. The circumstances under which its victims are attacked, have made it impossible to detect, capture, or identify it; and accounts of its size, shape and color differ greatly. There is some testimony as to a repulsive odor given off by the insect. While at first its victims were attacked only at night and in their beds, it was later reported that the redoubtable insect was equally lively during the day, and did not hesitate to attack picknickers in the woods. Attempts to identify it with the "assassinbug" seem to have been unsuccessful. This newspaper bug is very largely mythical, and opinions differ as to whether it is the subject of a plain hoax, or a write-up by the press-agent of the Window Screen Trust—if such a trust has yet been organized. Nevertheless, while most of the depredations of the alleged new pest may be attributed to the mosquito, assisted perhaps in certain cases by a stray spider, horse-fly, or other familiar insect, the very earliest cases bear a marked likeness to the work of the so-called "blood-sucker" or "big bed-bug" (connorrhinus sanguisuga), which is a resident of the Southern States, but has been seen as far North as Southern Ohio. What with the rush of country to city, the new and increased means of transportation, and analogous factors, it is by no means impossible that this creature may have been carried out of its former habitat. A good account of the conorrhinus is lacking, and would be very acceptable at the present time,

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Endorachidian Injections of Antitoxin in Tetanus

Hardly has the annual toy-pistol "epidemic" of tetanus — with its heavy mortality rate—subsided, when word of a new therapeutic resource is received from Europe, and it is not improbable that the timely application of this resource might have saved a few lives. Professor Schultze, of Bonn, obtained a favorable result in a case of tetanus by first tapping the cerebro-spinal sac by Quincke's method of lumbar puncture and replacing the fluid withdrawn by antitoxin injected within the sac. In reporting this case, Schultze modestly states that the patient's symptoms were of moderate severity only, and that antitoxine was also used subcutaneously while the patient was kept well under the influence of morphine and chloral; he does not, therefore, claim that the endorachidian injections were the means of saving the patient's life. Nevertheless these are strong theoretical reasons for believing that this method is of special value, and that it may supersede the endocranial injections, which have not added much to our control of the disease, although much time and pains are required in this mode of procedure. The endorachidian operation appears to be doubly indicated because the cerebrospinal fluid is highly charged with the toxins of tetanus, and by withdrawing some of the fluid we eliminate some of the toxins. By then injecting the antitoxin we neutralize the remaining toxins for the time being. Schultze tapped the sac twice and drew off respectively 20 and 30 c.cm. of fluid, injecting on each occasion 15 c.cm. of antitoxin. The improvement in the symptoms following the injection was not sudden or striking; in fact after the first injection the spasms appeared to be worse, and muscles previously non-participating were then affected. The recovery of the patient appeared to be assured, however, before the case had progressed far. Cases of recovery in tetanus are occasionally reported when the treatment has been purely sedative and expectant. Hence a series of cases in which Schultze's method has been used must be forthcoming before we can form any definite idea of its value, but it certainly seems to be deserving of an immediate trial at the hands of the profession.

Epidemic Infantile Paralysis

The daily press is just now engaged in a serial account of an alleged epidemic of infantile paralysis in a neighboring city. It is manifestly unsatisfactory to comment upon medical matters as stated by the daily press, but as some time must always elapse before a scientific account of outbreaks of disease reaches the medical press, a word of provisional comment on the alleged epidemic can do no harm. Of course, it is known to all practitioners that acute poliomyelitis is the ordinary cause of infantile spinal paralysis, but the etiology and possibility of contagion or infection are subjects wrapped in much obscurity. Within the past few years a Swedish pediatrist worked out, to his own satisfaction, a demonstration that acute poliomyelitis often appeared in small epidemics, explicable only upon the ground of contagion. He admits, however, that the apparently contagious nature of the disease had already been recognized in several countries, including America. Again, within a year, neurologists have called attention to a number of points of similarity between epidemic cerebro-spinal meningitis and acute poliomyelitis. The most striking point of agreement was the occurrence of the Weichselbaum meningococcus in both diseases. This fact, with the frequent occurrence of the two affections in children, and the epidemic character which each may assume, constitute the points of resemblance. It is, however, paradoxical that the two maladies do not at times co-exist or present transition forms; but we must remember that the meningococcus is the apparent cause of several other local infections which bear no resemblance to nor have no association with either of the two diseases under consideration. The meningococcus is supposed to be present in nasal mucus (with the picture of coryza) in cerebro-spinal meningitis; and the diffusion of the malady is believed to occur from this intra-nasal focus. Hence, it would seem advisable to disinfect the nose in these cases of epidemic poliomyelitis. If the cerebro-spinal fluid contain the meningococcus to any extent, lumbar puncture would be rationally indicated.

SOCIETY REPORTS

PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting June 13, 1899.

The President, Dr. E. B. Graham, in the Chair.

Dr. L. C. Peter presented a boy 9 years of age, of marked nervous temperament, and a neurotic family history, who acquired the habit of rumination when 7 years old. At first the food returned only upon voluntary effort, but at the time of his appearance at the hospital the food regurgitated without effort on the boy's part. He rechewed and swallowed it for several minutes after eating, or until the presence of free hydrochloric acid rendered the food sour. Recovery followed tonic, sedative and suggestive treatment.

Conclusions:

1.—Rumination in children is a stomach neurosis, associated with idiocy; or, as in adults, with a profoundly neurasthenic condition.

2.—It is under the control of the will.

3.—Prognosis, except in idiocy, is good.

Dr. Peter also presented a boy of 7 years, suffering from muscular pseudo-hypertrophy. The muscles of the thighs and calves were much enlarged, as were also the supra and infraspinatus. Some of the shoulder group, arm and forearm muscles were atrophied. His gait was waddling, and his manner of rising from the floor, when placed upon his back, was characteristically "climbing up his own legs." The case was the only one which had occurred in the family.

Dr. Albert Woldert, by invitation, presented a case of urticaria pigmentosa following chicken pox. The patient was a boy 11 months of age, born of English parents. When 3 months of age, the patient had a well-marked case of varicella, lasting about two weeks. At that time the disease was prevalent in the immediate neighborhood. One week after the rash of chicken-pox had disappeared, the mother observed some reddish blotches, or wheals, on the anterior surface of the chest. Four days later, a similar circumscribed area appeared on the abdomen, three days later upon the thighs, and finally upon the anterior surface of both legs. Within three or four days after its occurrence upon the legs, spots were found on the back of the neck, and later upon the entire dorsal region of chest and thighs.

In all the involved areas, after the rash had existed for about one week, the color changed to a light brownish, salmon or fawn color, and after a period of eight months, may be observed at this time. The eruption may be described as existing in the form of maculo-papules, which are both discrete and confluent. Itching is not a marked symptom in this case.

"**Pneumonia in Children.**"—By Dr. J. C. GITTINGS and Dr. C. F. JUDSON.

DISCUSSION.

Dr. NEWCOMET.—I wish to ask whether the authors do not think that alveolar catarrh may not be the cause of many cases of asthma that begin in early life and have no other recognizable cause.

I have in mind two cases that have persisted since early infancy, and present no heart-lesion or other discoverable cause for their asthmatic attacks beyond a constant bronchitis, that does not respond well to any treatment. It seems to me that they might well be attacks of alveolar catarrh in infancy.

Dr. GITTINGS closed the discussion. The points which struck us most forcibly in the attempt to make diagnosis between broncho-pneumonia and alveolar catarrh were as follows: The absence of any of the infectious diseases as an immediate predisposing cause; the absence of general bronchitis, either before or during the attack; the distinct tendency to localization, the lesion remaining only in the area originally attacked; the subacute or clinic course, without any of the acute symptoms which we are accustomed to expect in broncho-pnenmonia; and finally, the tendency to recovery.

Dr. CHARLES F. STRETCH reported a case of scurvy in a child of 13 months that had good hygienic surroundings. The family history was good on both sides. The child had cholera infantum last summer, but made a perfect recovery.

At birth the child was placed on condensed milk, given as frequently as the child desired. During the fourth month on this mixture, vomiting and purging occurred, and the child was placed on Mellin's food for the next five months. Vomiting and purging then appeared again, and Horlick's malted milk was used, and agreed for three months, when slight vomiting and purging resulted. At this time the first symptoms of the present disease appeared, consisting in profuse sweating, soon followed by soreness and swelling of the left leg, which was quite painful on flexion and extension. The child also gave a cry of pain when any portion of the body was touched. In a short time pain on passive motion appeared in the right leg. The child was now brought to the Surgical Department of the Children's Hospital, where the leg was put in continuous extension. This treatment was kept up for two weeks without improvement, when it became evident that the child was not suffering from hip disease. The child was now referred to the medical side, and Dr. Griffith diagnosed it infantile scurvy. There was enlargement of the costochondral articulations, and distinct enlargement of the epiphyses at the wrist joints. There was no spinal curvature or curvature of any of the long bones, no muscular rigidity, and no bleeding of the gums. In the past three days distinct petechiæ had developed over the instep, just above the toes.

The treatment consisted in small amounts of beef juice, orange juice, and milk and water, ⅓. Ten days later the condition of the child was much improved. He was still sweating continually, and had some fever at night, and the stools had contained curds, but the ecchymoses were fast disappearing. The pain was less, and the legs seemed much more movable. Nine days later the pain had entirely disappeared from the legs, but he did not seem to use them much. The bowels had now become constipated. Four days later the child continued to improve. There was no return of petechiæ; the legs were freely movable, and pain was entirely absent.

Dr. Jopson.—I saw this child when it was first brought to the hospital. It was first brought to the surgical dispensary with the idea that it had sustained an injury, there being a history of a fall a day or two before. There was slight rigidity of the left hip, apparent pain on motion, and no other local or general symptoms at that time. I made a diagnosis of hip disease, which was a tentative one, and the only one I could make at that examination, and immobilized the hip by means of a pasteboard splint. It was apparent after ten days that something else was the cause of the trouble and at this time attention was directed to the opposite leg, which now seemed to be the seat of the pain and tenderness. There were also a few petechiæ on the right foot. The idea of scurvy then occurred to me, and I asked Dr. Griffith to see the case, and he concurred in the diagnosis. I think the case illustrates the multiformity of symptoms which infantile scurvy may present and the necessity of being on the alert in cases of this nature. I know of one case in which the child had a swelling on the tibia which was diagnosed as osteo-sarcoma, and amputation advised. The parents of the child brought it to Philadelphia and put it under the care of a doctor, who diagnosed it as scurvy. Under anti-scorbutic treatment the child recovered, and the extremity was saved. I do not see how the diagnosis of scurvy could have been made at first in this case on account of the localization of the pain without the involvement of other joints and the absence of other stigmata of scurvy.

Dr. ALLEN.—Dr. Griffith knows that I have had some experience with rickets and scorbutus in my own family. My 8-months-old baby was carefully fed on dried extract of malt with cream, milk, and limewater. I had raised one baby on that mixture with no ill effects. The baby had a great deal of pain on movement of the legs. Small doses of salicylate were given, but he seemed to get worse. Subsequently I noticed hemorrhage from the gums. Dr. Griffith diagnosed it a case of scurvy. The diet was changed and orange juice given. In two or three days the pain disappeared. The child made a rapid recovery.

Dr. J. P. CROZER GRIFFITH.—There are several interesting points which this case calls up. Although the scurvy has completely disappeared, the child still has sweating, and, apparently, fever at night. This indicates clearly the distinction between scurvy and rickets. There are many who consider them intimately connected, and who apply the name "scurvy-rickets" to the disease, as seen in infants. After a careful study of the published reports of over 300 cases, my own conclusions clearly are that they are entirely different affections. Statistics clearly show many cases of scurvy devoid of any symptoms of rickets. Since both are probably dietetic diseases, there would seem to be no good reason why they should not both occur in the same case. Another interesting point is that there was no affection whatever of the gums in the case of the child reported. This is so commonly viewed as an almost necessary symptom that numerous mistakes in diagnosis occur as a result of its absence or late development. The statistics of the American Pediatric Society prove that a very large number of cases begin with an affection of the lower extremities, producing a very characteristic condition of affairs, yet with no alteration of the gums as yet. I have been particularly impressed by the painful pseudo-paralysis which cases of scurvy exhibit. In two cases seen within a month of each other during the past winter, the most striking feature was the way in which the legs hung helpless, almost like a child with poliomyelitis, yet with the added symptom of pain on the least attempt to handle them. One case appeared to be the exact duplicate of the other. In each case the physician in attendance had suspected the presence of rheumatism. In each, however, the gums were decidedly involved, and the diagnosis was easy. In the case reported tonight there was no involvement of the gums, yet the condition of the legs was characteristic. The italicised statement is made in Dr. Bailou's recent article on scurvy in the supplement to the *Cycloyedia of the Diseases of Children*, that when the teeth have not appeared there is no characteristic affection of the gums. There are undoubted exceptions to this rule, as the investigations of the American Pediatric Society show.

Dr. TELLER.—I think that scurvy depends upon the low percentage of proteids. I know a child that was raised on a modified milk, from the Walker-Gordon laboratory, in which the percentage of proteids was very low, this being illustrated by the condition of the gastro-intestinal tract. Scurvy developed in that child. The milk was Pasteurized, and, of course, prepared with the care always used in the laboratory. In another case, which I reported to the Pediatric Section of the A. M. A., the condition was brought about by one of the dried foods, malted milk. A physician diagnosed it as rickets with spinal curvature, and the child was put on a whole milk diet with some added cream. Intestinal and gastric symptoms appeared. Child was then placed under my care. I diagnosed scurvy, and placed the child on modified milk, and it got well. I think there are cases that develop when the children are getting a low percentage of proteids, and are not dependent necessarily on sterilization, nor are the dried foods responsible, as Dr. Allen seems to think from the observation of his case.

Dr. T. H. P. Twaddell reported a case of **Henoch's Purpura** in a child 6 years of age.

Family History: There was tuberculosis on the father's side, and a brother is now ill with phthisis. The child had had measles and pertussis.

On the night of May 27th she was given a bath under a hydrant. On the following afternoon she complained of pain in the ankles, the muscles of the calf, the knees, the quadriceps muscle and the tendons of the popliteal space. She began to vomit on the 29th, and had vomited ever since. Examination of the heart disclosed a faint systolic murmur at the pulmonary cartilege. Liver and spleen not enlarged. The abdomen was not distended, but was tender on pressure. From the knees to the feet there was a profuse purpura-like eruption, with slight edema along the tibia, but more marked in the flexure of the knee.

May 31st it was reported that she had had fever the previous evening. She had had three stools the day previous. There was no blood in them, but several ounces of blood were seen that morning in the stools, which were accompanied by pain and tenesmus. She had continued to vomit. The abdominal tenderness was more marked right in the iliac fossa. Spleen not noticeably enlarged. She had blood in the stools until June 2d. On the 3d there was no blood or mucus. She complained of pain in the right knee, and was unable to walk. Her appetite was good. She had no fever, and no blood came from the bowel. The purpuric spots had disappeared.

The diagnosis was based on the occurrence in a young child of hemorrhage into the subcutaneous tissues and from the bowel, associated with abdominal pain, vomiting, diarrhea and pains in the joints.

Dr. J. P. Crozer Griffith.—I asked Dr. Twaddell to report this case, because it illustrates the well-known way in which forms of purpura shade into each other. This case is one in which one hesitates whether or not to make a diagnosis of Henoch's purpura. The question was whether the discharge of blood from the bowel was accidental or not, and whether we had to deal with an instance of purpura rheumatica merely. A careful study of the case makes me regard it as a mild case of Henoch's purpura.

Dr. Allen.—I saw a case, two or three years ago, in which there was hemorrhage from the bowel, from under the skin, from the nose, mouth and bladder, as well as uncontrollable vomiting. The child was 11 or 12 years of age, with an exceedingly bad family history, tuberculous. Since that time a sister has died of tuberculosis. The question of diagnosis at that time was between typhoid fever and purpura on account of the gastro-intestinal symptoms. The abdomen was scaphoid and the temperature was never high. The case ran a course of about eleven days, and the child finally died from exhaustion from profuse hemorrhages. There was already some uncertainty in my mind as to whether I had a case of Henoch's purpura, or one of typhoid fever with hemorrhagic tendency. I did not try the Widal test, and have always been sorry that I did not get the child to the hospital where more could have been learned of the condition.

PRACTICAL NOTES

Aromatic Cod Liver Oil may be prepared, according to Duquesnel, by the addition of essence of eucalyptus, which perfectly covers the taste and smell of the cod liver oil:

℞ Ol. jecor. flav..............................150
Ol. eucalypt. æth........................gtl. ii

—*Die Heilkunde, Oct. 1898.*

The Treatment of Hypertrophy of the Tonsils by Internal Massage.—Kantorowicz reports the case of a girl, 12 years of age, suffering with marked hypertrophy of both tonsils. Although some adenoid vegetations had been removed some time ago she still complained of many disagreeable symptoms, especially of chronic catarrh and a catarrh of the respiratory passages, which recurred regularly in the Spring and Autumn. After the operation for the removal of the adenoid vegetations, she lost a large quantity of blood and had some fever for a few days. Being still very anemic, and the mother not permitting the removal of the tonsils by operation, Kantorowicz made trial of a bloodless treatment. He passed his index finger as far as possible into the pharynx, emptied, in the first instance, the filled lymphatic spaces, by a circular movement of the finger tip around the tonsil, and after fifteen or twenty circular strokings of the tonsil he pressed the latter out, so to speak, by intermittent horizontal pressure, which was also repeated about twenty times, and that pretty energetically (a lighter, tickling pressure caused the child to gag). The whole procedure only lasted a few minutes, when the same process was also repeated on the other side. Great salivation and shedding of tears was produced; this, however, became less day by day. At the beginning of treatment, the right tonsil, whose surface was traversed by a large vein, was the size of a hazel-nut and greatly reddened; the left, the size of a walnut, and full of holes. After treatment had been continued for two weeks both tonsils disappeared behind the anterior pillars of the fauces, the mucous membrane was clearer. The patient from this time on was not affected any more with catarrh. Other cases ended in a similar manner. To prevent his being bitter Kantorowicz made use of a plain Langenbeck's finger protector of metal; rubber rings are probably more serviceable, as they do not interfere with the movements of the fingers and also protect the latter from sharp carious teeth, which were always present in Kantorowicz's patients (ten or fifteen years old). This procedure can also be carried out in younger children; it is a little tedious, it is true (the massage must be carried on daily at least for fourteen days), but, on the other hand, is bloodless and does not change the structure of the tonsillar surface as an operative procedure with its following contraction does. The finding of carious teeth moved Kantorowicz to beg of the Zahnaerztliche Verein (Hanover), to observe the connection of carious teeth with hypertrophied tonsils, in its examination of 400 school children in 1897. The chairman, Dr. Kuhn, reported that in 75 cases of bilateral hypertrophy there were 296; in 24 cases of unilateral hypertrophy 101—diseased teeth, a result which probably points to the fact that many a hypertrophied tonsil may perhaps be avoided by the rational care of the teeth, and thus a disposition to affections of the throat be removed.—*Deutsche Medic. Zeitg., 1898, xix., 632.*

On Infectious Icterus in Children.—M. Kissel has observed ninety-six cases of infectious icterus in children ranging from one to fourteen years, in the course of six years. A few cases, which ran a very light course, might have been looked upon as catarrhal icterus, but Kissel does not recognize a sharp distinction between these two forms, so that he also includes the mild cases in infectious icterus. The greater number of cases occurred during the Autumn and Winter months, at a time therefore when gastro-intestinal affections are of rarer occurrence. Kissel divides his cases into three groups: (1) Very grave cases ending in death, six cases; (2) not particularly grave cases, with distinct symptoms of an infectious disease, favorable issue; (3) light cases, some of which present the picture of a simple catarrhal icterus. The beginning of the disease was rarely insidious. As a rule, fever made its appearance suddenly in a previously perfectly healthy child, frequently, also, a chill, headache, and vomiting occurred. Icterus made its appearance on the third, fourth, or seventh day. Kissel was able, in general, to corroborate; Hennig and Minerts' division of the disease into two periods—fever with icterus, then icterus without fever. The icteric hue of the skin and mucous membranes disappeared only very gradually within three or four weeks. No complaint was made of troublesome itching of the skin. The urine contained bile pigment, but cleared up again before the icterus had disappeared. There was albumen in the urine in three cases, but no casts. The feces also were not long without color; diarrhea was rarely present. The liver and spleen could easily be palpated, were enlarged, and the former especially was painful on pressure. The pulse became slow in three cases only. In the graver cases, which ended fatally, Kissel observed a series of nervous attacks, which reminded him of cholemia, loss of consciousness, delirium, great restlessness, general convulsions, disturbance of the respiration. The prognosis, according to Kissel, should be given with great care as slight cases frequently become serious; this is especially the case in weakly, anemic children. Those cases have an unfavorable prognosis, where the intense icterus remains stationary for a long time, and the patient rapidly loses flesh, and also where great excitement is present. As regards the treatment, Kissel is in favor of a continued calomel treatment; he orders calomel, 0.02–0.06 g. four times daily in the course of ten days, later he gives alkalis.

Poisoning of an Eight-Months-Old Child by Antipyrin (LEDERER).—The father of the child administered to it 0,5 g. of antipyrin. Half an hour later Lederer found the child in a condition of collapse, with a pulse beat nearly completely absent. Strong black coffee and calomel 0,05 g. hourly until it acted well were given. In a few hours improvement manifested itself, and recovery slowly took place.—(*Ibid.*)

ABSTRACTS

A CASE OF PUBERTAS PRECOX.

KLEIN (*Deutcshe Medinische Wochenschrift, 1899, xxv., 47*) was called to a girl, 2½ years old, on June 6th, who was suffering with the prodromal symptoms of measles. These took a normal course, and the case only became interesting on account of the casual finding of precocious sexual maturity.

The history was as follows: The patient was born January 17, 1896, as the first child (a second child, also a girl, now 14 months old, is healthy and normally developed). She was very weak at birth, and during the first six months of life was always ailing. The first ten months of life were spent with strangers, and the parents cannot give much information for that time. When the patient returned home, however, in November, 1896, the parents noticed the unnatural bodily development; well-formed breasts, large, hairy genitals, from the latter a flow of blood which recurred at regular menstrual periods. From November, 1896, to September, 1897, there was a regular flow of blood, recurring at intervals of four weeks, of moderate intensity, lasting eight days. This menstruation then ceased up to Christmas, 1897, when it again recurred, and not only continued to the present time, but changed into a continuous metrorrhagia, which resisted all medication, tonics and styptics. While the child had measles, the flow was increased, but ceased on July 5th of its own accord, and has not reappeared since. Besides the flow of blood there was also a leucorrhea present. The general health is not altogether satisfactory. The child only learned to walk at 1½ years of age, had laboriously attempted it for two months and then again ceased its attempts, so that it was unable in June even to stand on its feet. Dentition appeared at 9 months of age and took a normal course.

Present condition (not always accurate on account of the child's restlessness): There is nothing unusual in the appearance of the child at first sight; it is rather small (only measuring 90 cm. in length). General carriage rather decrepit; skin wrinkled and covered with eczema; relaxed muscular tissue; slight adipose deposit. The genital system is perfectly matured. A pair of well developed mamme about the size of lemons have their seat on both sides of a flattened thorax; the nipples are erect and surrounded by a dark, pigmented areola. Well developed glandular bodies can be felt in the breasts, which latter are devoid of fat. The axilla are devoid of hair. The size of the vulva is that of a 14-year-old virgin. The labia majora, moderately supplied with fat, are in contact, and are covered with a moderately dense growth of light hairs ½ cm. in length, which are, however, absent from the mons veneris. The labis minora are very small and only developed in their upper third, the clitoris. on the other hand, is pretty long and thick. A circular hymen is visible at the entrance to the vagina; the mucous membrane is reddened and succulent, showing traces of leucorrhea. The abdomen is quite distended (circumference at the navel 54 cm.); the navel prominent (no rupture, however); palpation is negative; percussion gives a tympanitic sound within two fingers breadth above the navel, from here downward there is perfect dullness in front, laterally and behind there is, however, intestinal sound. Distinct signs of rachitis are not present. The physical development corresponds with the age. The child shows not a trace of modesty. Klein has now observed this case five months, from the time of examination. The patient remained weak and miserable for a long time after the attack of measles, so that she came near presenting the picture of a progressive cachexia. A change has taken place, however, since early in September, and her strength is continually increasing, so that her general condition is at present favorable.

We are here dealing with an organism which has early and with abundant rapidity passed through its development to sexual maturity. We are not, it is true, able from the history to trace the period when the first signs of maturity made their appearance; the occurrence of an intrauterine maturity seems, however, most plausible. As, however, the rest of the bodily and psychic development did not exceed that usual at this age, the case should, according to Kussmaul, be classified as one of isolated sexual maturity. The retardation in growth which was present as the only other sign of deviation from the normal type, seems to be a corroboration of Kussmaul's law also, according to which "the body ceases to grow as soon as sexual maturity is completed, even though it remained below the medium size."

In searching for the cause of this abnormality of development, we might perhaps make use of the abdominal findings (distension and dullness); Kussmaul at least mentions the presence of ovarian tumors as accompanying symptoms of pernicious menstruation in three of his cases. This, as also the etiology of the irregularities in the function of the sexual organs, was not determined, however, in this case on account of the incomplete examination. The final cessation of the metorrhagia may, at most, be connected with the febrile general disease, particularly as morbilli show an especial affinity for the vaso-motor centers.

ADENOID VEGETATIONS OF THE NASO-PHARYNGEAL CAVITY, WITH ESPECIAL REGARD TO THE CAUSE OF THEIR FREQUENT RECURRENCE IN THE SAME INDIVIDUAL.

HERMANN (*Therap. Monatsh.*, *1898*, *xii.*, *426*) distinguishes two forms of adenoid vegetations; a primary, which is due to a tuberculous taint in the individual, presenting an obstruction to respiration, and which may also lead to involvement of the nose. Their removal leads to a cure, if it is done thoroughly. Secondly, secondary adenoid vegetations which, according to Hermann, are produced as follows: The patient acquires a coryza, which becomes chronic; a swelling of the turbinoid bones takes place, which continues for a long period, maybe for years. The nose is not sufficiently roomy for the passage of air. Insufficient ventilation and congestion of the secretions may now lead to a hyperplasia of the pharyngeal glands. This introduces a new factor, which restricts nasal breathing, and this is finally altogether prevented. If the adenoid vegetations are removed in a case of this kind the patient is not cured, and the vegetations will reform, as it is impossible to remove all adenoid tissue from the nasal cavity. A necessary conclusion is thus presented, in general practice, that the nose should, in the first instance, be treated, and the catarrhal swelling removed. For this the following treatment has been found practical: The nose should be painted with ½ per cent. solution of cocain, and a mixture of natrium sozojodicum, 3.0 to 12.0 of boric acid, or of the latter alone is insufflated. In especially severe cases, painting with a solution of cocain must be repeated several times during the day; in simple cases one application is sufficient. In about eight days the good effects are generally noted. Occasionally the hyperplasia of the pharyngeal tonsil has so far disappeared that its extirpation may be spared patients afraid of the knife. As a rule, however, they should be removed. After the operation the patient is confined to his bed for two days, and is nourished with cold milk, then he may be allowed to leave the house. The applications to the nose are to be continued. Simple powder insufflations will now be sufficient. It is only rarely that we are compelled to cauterize the turbinated bones, for example by means of trichloracetic acid. Treatment of the ear, where necessary, should not be undertaken until two weeks have elapsed after the operation. Hermann uses Jurasz's tongs and Kirstein or Gottstein's knife in operating. Hermann does not approve of etherizing the patient for the operation.

EXTRAUTERINE PREGNANCY LAPAROTOMY—A LIVING CHILD—RECOVERY OF THE MOTHER.

J. JURINKA (*Centralbl. f. Gynecologie, 1898, xxii., 333*) says that this case is of especial interest. The child, a girl, was born asphyctic, but was resuscitated in a short time by blowing air into the lungs and employing cutaneous irritation. The mother remained in the institution sixty days, and during this whole period the child was therefore under observation.

The child, which was not carried to full term, weighed 2,250 gr. at birth. It was fed with Soxhlet's milk, and lost flesh up to the tenth day of its life, when it weighed 2,040 (210 gr.). From this time on it gradually gained somewhat, and when dismissed it weighed 2,320 gr. (plus 70). The measurements taken at birth and when dismissed (sixty days old) were as follows:

Length, 45-48 cm.; head-measure, D.b.t., 7-9½; D.l.p., 8½-10; D.m.o., 13-13½; D.f,o., 11-12; D.s.b., 9½-10; Circumference: C.m.o., 35-37; C.f.o., 32½-34½; C.s.b., 31-34.

These figures show that the growth of the skull was only slight in the direction of the sagittal suture, while the breadth was increased markedly;

which can possibly be explained by the fact that the skull was diagonally compressed on account of the absence of room in the abdominal cavity.

The child presented, above all, the following deformities immediately after birth: the skull was strongly flexed to the right side, so that the right half of the lower jaw lay closely in contact with the breast and the articulation of the jaw with the right shoulder. The skull could, it is true, be raised, but resumed its flexed position in a short time. This position was accordingly the cause of the following asymnetrics of the skull: the face was strongly pushed to the right, the lower jaw being moved to the left, and, besides, not meeting the upper jaw equally in all parts; within the left side of the mouth the alveolar processes gaped, while they were in close contact with each other on the right side; besides this. the left right half of the lower jaw was smaller and more flattened than the left on account of pressure, and the site of the articulation of the right jaw was distinctly depressed so that the indentation could be seen in the head when the latter was raised from the shoulder, which was formed by the pressure of the shoulder. The left region of the forehead and vertex also presented a marked flattening and broadening from the close pressure exerted by the skull on the shoulder, while the right region was narrowed and more convex. The occiput towered above the right shoulder behind, markedly protruding. The child at the same time also presented nervous disturbances: the right palpebral fissure is narrower; the eyelid more furrowed; the left angle of the mouth lower than the right, the left naso-labial fold more flattened, both, when moved, show better nerve supply than on the right side, where these parts maintain their contracted position nearly immovably. The right masseter muscle is more firm and seems to have retained its function better than the right. The right arm remains adducted to the body on moving the elbow about 90°, the right hand is strongly flexed toward the ulnar side (90 per cent.); the fingers form a fist, and the thumb maintains a strong opposition and flexion contracture. Only very slight movements of the third, fourth, and fifth fingers are made spontaneously, retaining, however, their position of palmar flexion. The left hand does not present any notable abnormalities. The left lower extremities present stronger spontaneous movements than the right. Both feet are in equinus position, the right more so than the left. The toes of the right foot are permanently fixed in the claw-position, and the fourth toe of both feet is pushed in a dorsal direction out of the row of toes. The muscles of the right lateral half of the body, especially those of the right extremities, are rigid, partly presenting a spastic contracture, and on account of this, pretty strong resistance is felt in making passive motion. Both patellar tendon reflexes are exaggeràted, somewhat more so, obviously, on the right side. Pressing the patellar downwards excites a patellar spasm on both sides. All other reflexes, as well as sensibility, are seemingly intact. Spontaneous movements are carried out decidedly more frequent and more vigorous on the left side.

We therefore find present a spastic paresis in the region of the right facialis of the lid and cheek as well as on both extremities of the left side, more so in the upper extremity. Here we find a condition of pronation as well as contracture, as regards the ulnaris and median muscles, namely a preponderance of the flexor muscles, as we usually find present in a central lesion (of the central convolutions of the cerebral motor tract).

The right leg is extended, its flexor movements are more infrequent; we recognize therefore a preponderance of the extensor muscles, which would also point to a cerebral lesion. The pes equinus, which is present on both sides, as well as the dislocation of the toes, can probably be referred exclusively to the want of space in the amniotic sac.

The whole symptom-complex therefore points to a lesion of the left lateral central convolutions (or of the cerebral motor tract) especially in the region of the facialis and the upper extremity, with a consecutive spastic paralysis, especially of the facialis of the right lid and cheek, and of the right upper extremity.

In how far the asymmetry of the skull or the flattened condition of the left vertex region should be looked to for the explanation of these nervous symptoms, we are, of course, unable to say. The fact, however, that these conditions remained nearly unchanged from birth for two months leads us to suspect a deeper, perhaps permanent, lesion of this region. The cause of the deformity of the skull, especially the flattened condition of the left vertex region, cannot be found in the isolated pressure of the bone, for the spot referred to was found in the right hypochondrium about three finger breadths below the arch of the ribs, but rather in the contracted space of the amniotic sac, which was intimately in contact with the fetus at every point, and only left room for a slight amount of amniotic fluid, in the deep parts of Douglas's cul de sac.

A SCHOOL AND HOUSE EPIDEMIC OF ALOPECIA AREATA.

Blaschko (*Berlin. klin. Wochenschr., 1898, xxxv., 108*). The case, presented by Blaschko to the Berliner medic. Gesellschaft (19, 1, '98), is in itself nothing unusual, the patient showing nothing besides the typical picture of alopecia areata. The case is, however, of especial interest, because it throws a surprising light on the etiology of the disease, and demonstrates the contagious power of the affection, as has been continually claimed by the French.

The boy belongs to a small school and house epidemic of eight cases. The history is that of eight boys, from a parochial school in Berlin, who became affected with this disease one after the other during the recent summer. Two of the boys live in the same house, the other three were very intimate playfellows and schoolfellows, the third one resides opposite the first two. The father of one patient is a barber, and also attended some of the boys in his professional capacity. This complicates the matter, and we may assume three possible ways of contagion: In the school, in the yard where all boys played together, through the barber. Undoubtedly it was carried from one to the other. Herpes tonsurans and eczema seborrhoicum can be excluded, the cases are typical alopecia areata, accompanied by the peculiar atrophy of the hair roots, the slight trichorrhexis, etc.; the scales noted here and there are the result of repeated applications of tincture of iodine.

Discussion.—Behrend does not believe in the contagious quality of alopecia areata; he has never met with its diffusion in families or schools. As a rule other affections should here be considered. In this case, also, the mentioning of the scales is suspicious to him. In alopecia areata the skin is perfectly smooth, and only in a very acute beginning is a slight redness present.

A CASE OF URTICARIA PIGMENTOSA.

Th. Mayer (*Berl. klin. Wochenschr., 1898, xxxv., 516*). Such a case from Lassar's clinic was presented by Mayer to the Berliner medic. Gesellschaft (18, 5, '98); The 2-year-old, otherwise perfectly healthy, even well-nourished child presented an eruption which covered his whole body excepting the head. It consists of various large (the size varies between that of a lentil and the thumb) light to dark-brown colored spots, besides which other forms of efflorescence are also visible; here and there ordered in groups, distributed to the most various parts, are a number of bright red, roundly oval papular formations on a hyperemic base; furthermore, these same formations which,however,—more noticeable to the touch than the sight—present a slight exudation in the superficial strata of the skin, and also isolated efflorescences at the distal parts of the body, as the border of the foot, in which this exudation has led to marked bullous formations.

The affection has lasted over a year; began with the formation of the very smallest papules, which made their appearance at times here, at times there, and which always disappeared spontaneously, leaving a pigmentation behind; this progressed in exacerbations, the history of their appearance—with great itching—always being repeated.

Both the previous history and the clinical picture warrant a positive diagnosis of chronic urticaria, accompanied by pigmentation. The affection is of rare occurrence, and was observed only four times in 100,000 patients of the institution; never, however, with the appearance of a transudation.

PEDIATRICS

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ORIGINAL ARTICLES

MALARIA IN CHILDREN.

By Dr. MONCORVO,

Professor of Diseases of Children in the University of Rio Janeiro,
Corresponding Member of the Paris Academy of Medicine.

(*Concluded from September 1st issue*).

BEFORE discussing the therapeutical possibilities in connection with malaria, a few words should be devoted to prophylaxis. During long summers in countries where paludism is endemic, preventive measures ought to be vigorously enforced. Habitations which are low, damp and badly ventilated must be avoided; in fact, children living on ground floors make up the majority of the victims of malaria.

Country people should live in high localities away from rivers and marshes, hay plantations, etc. The insalubrity of such localities is indicated by the swarms of flies and mosquitoes which serve as an advance guard of paludism.

In the suburbs of Rio we constantly see little lakes in the grounds which surround the residences ; these lakes, designed for embellishment, constitute so much stagnant water, which menaces the health of the little children. These places should be filled up and abolished at any price. The lakes in the public gardens, unless the water is constantly renewed, are similarly noxious. Even in Paris, where paludism is far from being endemic, it has been observed that there are outbreaks of intermittent fever (about the Park Monceaux for example) whenever the pond water is not changed.

Laverau's advice to hermetically close all bedroom windows toward evening in order to shut out mosquitoes is very hard to follow in warm countries during the summer, for obvious reasons. The only feasible precaution is to wrap mosquito-netting about the beds of little children. If no netting is at hand, veils for the face and mittens for the hands must be resorted to. In the case of the well-to-do, children had better be removed to some non-malarious district.

Water should never be given to children unless it has been sterilized, and during the hot season the diet must be carefully regulated, because the least digestive disturbance predisposes toward contracting the disease; the same is true of taking cold at a time when the child is covered with perspiration. The most scrupulous care should be employed in preventing exposure, however slight, which might lead to catching cold. When contagious exanthemata are about, especial care should be employed to prevent malarial infection, lest the child be attacked by two affections simultaneously.

The prophylactic virtues of quinia should not be overlooked, and when malaria is epidemic it will be well to administer a prophylactic dose of 15—25 cgm., with the prospect of an excellent result. I do not, however, look upon arsenic as possessed of any prophylactic value, and given in doses of 2—5 mgms, it has never appeared to prevent infection. We must almost admit that quinine may at times fail in severe epidemics.

Coming now to therapeutics proper, it is not enough — as my eminent friend Henri Huchard well states — to know that quinine is a remedy for malaria, but we must also know exactly how to administer it! In the adults, the drug is usually given two hours before an expected outbreak, or after the attack has passed. In the young child, however, we do not as a rule, have the periodicity of the disease to guide us, and have to give the drug at regular intervals. With regard to dosage, quinine does not possess a cumulative action in the child (contrary to the belief of some physicians), and this drug is one of those for which children exhibit a tolerance. The explanation of this fact is found in the natural activity of the child's emunctory organs. The drug is, therefore, to be given continuously as long as there is any suspicion of a trace of the disease.

With regard to the precise form of quinine to administer, I have for some years limited myself to the basic sulphate, bisulphate, bromhydrate and chlorhydro-sulphate. These salts are rich in percentage of alkaloid. I give them by the mouth, rectum, endermic and hypodermic methods.

a. Gastric Method. Any of the salts may be given by mixing them with honey, syrup or licorice, but practically the resistance of the child or the act of vomiting often prevents the ingestion of the drug. When this method fails we should make use of a very soluble salt (bimuriate, chlorhydrosulphate), which may readily be diluted in an appropriate vehicle flavored by orange peel, vanilla, mint, etc. The daily dose must vary with the age of the patient and gravity of the case.

Quite recently Dr. Sheffield, of New York, (*New York Med. Journ.*, Oct. 1, 1897), has written in corroboration of my views upon the subject of the posology of quinine. He believes that doses too feeble or given for too short an interval are often responsible for the persistance of attacks of infantile malaria.

The daily dose for nurslings and for mild cases in older children varies from 25 to 50 cgm. In medium cases in older children I give 50 to 100 cgms. per diem. Finally in very serious cases I disregard the age and give from 1.5 to 3 gm. in 24 hours. I give the drug at intervals of two hours or one hour according to the severity of the case.

It often happens that on account of gastric intolerance the attendants do not administer the remedy according to directions. In such a case they must be exhorted to persevere, because this intolerance does not usually persist. The most that they may do is to diminish the dose or prolong the interval, but never discontinue the drug outright. Quite recently I have used *euquinin* in refractory cases with undoubted benefit in the form of 10 cgm. pellets.

b. Rectal Method. Quinine may be given by enema or suppository. Bertherand first popularized this method in Algiers in 1849. My experience with the method leads me to regard it as unreliable ; the therapeutic action is weak and some intolerance of the bowel is provoked. Experiments (in adults) have shown that in only a limited number of cases has quinine appeared in the urine within an hour after having been given per rectum ; while ringing in the ears, etc., was perceived in but a very small percentage of cases. In general it may be stated that in 75 per cent. of cases of rectal administration of quinine the action of the drug is practically *nil.* Another experimenter believes that nine-tenths of the drug is wasted when given per rectum. The rectal administration of quinine is contraindicated when we need an active and decisive result. If the method is ever indicated, the suppository would be preferable to the enema.

c. Dermic and Endermic Methods. At one time it was attempted to administer quinine by causing the patient to wear an undergarment containing the drug in powder form. This method having failed Gerhardt and Jackson, of Philadelphia, tried cutaneous frictions, and other clinicians followed suit, using the powder, tincture, ointment, etc., etc. The friction method has been used extensively in the case of children, and Semanas, of Lyons, published a monograph upon this subject in 1859. Studies upon the absorption of quinine were also pursued by Bouchut, Briquet, and others; the general opinion being that the drug, when thus administered, was largely inert. Researches made by myself in 1875 tended to corroborate this view.

d. Hypodermatic Method. This mode of administering drugs is destined for a great future, and it seems to me that the profession has been somewhat remiss in applying the method to the exhibition of quinine in malaria. The parents of a sick child have a repugnance, often insuperable, towards the practice of hypodermic injection, which, before the days of asepis, was rightly held to be attended with some dangers. From another standpoint it appeared that the drug, when administered by this method, did not produce its customary effects. Nevertheless I began the use of this method in 1874 in infantile therapeutics, and I have made about 20,000 injections since that time. I am therefore in a position to praise both the efficacy and harmlessness of the method. It is necessary to procure a soluble salt in a concentrated form, and the neutral chlorhydrate or chlorhydrosulphate perfectly fulfill these requirements. All the modern aseptic technique should be employed, for omission in this respect is often responsible for an untoward result. The injection should be made behind the trochanter or between the shoulder blades, and should be deep enough to reach the muscles ; these deep injections are at once more painless and certain. In urgent cases, where the stomach is refractory, this method is extremely valuable, in fact, as I believe, often truly marvelous; and it may, by the promptness of its action, save a life which would otherwise be forfeited in a few hours. Before dismissing the subject of quinine therapy, I must refer to the intravenous method of exhibiting quinine, as lately introduced by Baccelli, of Rome. This method I have never made use of, and I believe it will encounter more obstacles than has fallen to the lot of the hypodermic method before it is adopted into pediatric practice.

Coming now to the succedanea of quinine, I believe that I state the case for arsenic fairly when I admit that it possesses an antimalarial action which is at the same time too feeble to be effective in severe cases. I employ arsenic very often in these cases, because, in addition to its specific property, it is also a tonic and valuable as a nervous roborant.

The salicylate of soda, as advised by Zilewicz in infantile malaria, has not proved efficacious in my hands ; while the cerebral accidents which it may induce will prove a barrier to its continuous use.

With regard to the filtered decoction of lemon, as advocated by certain Italian physicians, my experience has been that this medicament is hard to administer because of its bulk. I have employed it only in benign cases, and would hardly care to rely upon it in instances of pernicious malaria.

During the years 1886–1888 I reported twice upon the question of the efficacy of antipyrine in malaria for children. I had made a trial of the drug in the various types of paludic fever. The testimony of authorities seems to be that antipyrine and similar drugs possess no antiperiodie powder. There is, however, no question that they can reduce the temperature even more rapidly than quinine ; while by the profuse diaphoresis which they induce; an open door is provided for the elimination of toxins. Finally these coal-tar products work synergistically with quinine ; and therefore I do not hesitate to vouch for them whether, given jointly or alternately with quinine. I began to advocate the use of antipyrine in 1886, and since that period the thallin, antifebrin and other drugs of the aromatic series have added nothing to the therapeutic efficacy of antipyrine while the coefficient of toxicity has been much increased.

Within a comparatively short time a new vegetable remedy has been added to our repertory, for the treatment of malaria in children. This plant, which grows in most countries of the civilized world, is known in the United States by the familiar name of sunflower. It is stated that the Russian peasants lie down in a bed made of sunflower leaves when attacked by malaria. The Russian physicians have, therefore, made use of a tincture of sunflower leaves or flowers in malaria. Acting upon this suggestion, I have tried this remedy in at least one hundred children, and my results have been reported in the *Bull gen. de. therap.*, Paris, 1893.

As a rule the remedy was well borne, even in the youngest children ; while the results to be attributed to its use were beyond my expectation. The action of the remedy compared very favorably with that of quinine. My colleagues in Rio have confirmed my results to such an extent that I feel authorized to encourage practitioners to make use of the *helianthus annuus* in malaria.

Another remedy which I have made use of is methylene blue. Galtmann and Ehrlich have employed this remedy in malarial fever in daily dose of 50 cgm. and got a prompt result. Others have subsequently made use of this drug with somewhat conflicting results, but it appears certain that methylene blue is able to destroy the hemathozöon, although it possesses no advantages over quinine in this respect.

Personally, I first used methylene blue in 36 cases (ages from 23 days to 14 years); and of this number 10 patients were cured and 3 improved. The results were reported to the Therapeutic Society of Paris (Jan. 11, 1893). I then used the remedy on a larger scale in daily amounts of 20—40 cgm. in divided doses. The disagreeable effects of this remedy reported by various authors were not observed in my cases, while the drug was readily administered.

Bosin (*Deutsch. Med. Wochenschr.*, 1893) made parallel experiments with regard to the antiparasitic qualities possessed respectively by quinia and methplene blue; the test being employed directly upon the blood. From these tests it appeared that the blue was much more rapid in its action as a parasiticide.

A remedy recently advocated for malaria is phenocoll chlorhydrate, introduced by the firm of M. Bayer, of Elberfield. I have recently made a trial of this remedy, and can report favorably upon its use. It is freely soluble and readily taken by children in doses of 25 cgm. to 1.5 gm.

Another new remedy is asaprol, advocated by my lamented friend, Dujardin-Beaumetz. In a certain number of cases of malaria I obtained such good results from this remedy that I wish to pursue my trials further. Asaprol is freely soluble and possesses but a slightly bitter taste, and is in general readily ingested by children. This substance being feebly toxic, may be safely anministered in daily dose of 3 gm. The results obtained from this remedy, however flattering, require a more extended trial.

However, there are other indications besides fighting fever and destroying parasites. The gastro-intestinal tract requires the use of a purgative to facilitate the |absorption of the specific remedy,.and as a synergistic measure to the proper management of the case. As a rule calomel should be admistered, with podophyllin and saline cathartics in particular cases.

As an auxiliary measure to prevent secondary infections I recommend irrigation of the mouth and nasal cavities with antiseptic solutions—usually boric acid (½ to 1 per cent.). This practice must be persisted in, because we very often ward off a secondary infection which is much worse than the primary disease. From the same point of view we must seek to render the gastric-intestinal tube aseptic by using substances belonging to the aromatic senses: Salol, bismuth salicylate, benzonaphthol, etc. These substances may be taken in juleps in alternation with quinine or its succedanea. In cases of rebellious diarrhea I combine tannin with some of the antiseptic agencies. Since 1888 I have pursued researches upon the tolerance toward tannin possessed by young children. I found that the latter could bear a daily dose of 7 or 8 gms. without serious accidents. In 1876 I made an investigation of the properties of tannigen, which do not appear to differ from those possessed by tannalbin. In common with other investigators, I have nothing but praise for these remedies. I habitually prescribe a mixture containing bismuth salecylate, benzonaphthol and tannigen (or tannalbin) in diarrhea associated with malaria.

Whenever an antipyretic is indicated, I repeat that antipyrin fills all the indications, the tolerance in infants being perfect. If the state of affairs warrants it, the remedy may be employed subcutaneously, and results unlooked for and apparently marvellous will result. Lukewarm baths will prove a useful synergist whenever there is much excitation with tendency to convulsions.

I can confidently recommend certain hypnotics in these cases: Hypnal, chloralose, trional. Of the latter I give 15 to 20 cgm. at a single dose in milk, warmed and sweetened. Hypnal must also be sweetened, while chloralose is best given in a julep with syrup of tolu or gooseberry.

If a child is overcome by adynamia or algidity, we may utilize hypodermic injections of ether, camphorated oil or caffeine. The latter is especially indicated because it is a diuretic and heart tonic. It is true that caffein is no new remedy for adults, but it is comparatively untried in children. As early as 1888 I have called the attention of pediatrists to the excellent effects obtainable in adynamia and feeble heart, as seen in young children with acute malaria, with added tendency to collapse and algidity. Since that period I am happy to state that the hypodermic injection of caffein has been universally adopted in pediatric practice. Caffein, because of its threefold property—general tonic, cardiac tonic, and diuretic—will prove to be a most valuable aid in the treatment of infantile malaria. It will also neutralize the physiological action of the quinine when the latter drug has been given in extra large doses on account of the gravity of the disease. I use ordinarily half to one cubic centimeter of Fauret's solution of caffein—equal to from 12 to 25 cgms. of the drug. One must be very careful in thus administering caffein to nurslings, as it would be possible to further excite the sensibility of the bulb—already affected by the disease. In this way temporary opisthotonous has been produced.

We must then admit that we are far from being helpless in our struggle against the plague of childhood in Brazil; on the contrary we have at hand a number of efficacious agencies for antagonizing this disease. Quinine must still be considered the sheet anchor in malaria, and in general is one of the great therapeutical triumphs of the Nineteenth Century.

A word as to the organotherapy of malaria in children. The results obtained from the use of splenic extract are inconclusive. The remedy is doubtless innocuous, and I shall continue my studies in this direction.

REMARKS UPON SCARLET FEVER.

By Walter Suiter, M.D.,
Herkimer, N.Y.

THE variable character and almost infinite variety in *scarlatina* outbreaks have always been subjects worthy of consideration and comment.

There is perhaps no disease that epidemiologically presents such interesting and puzzling problems to the physician and sanitarian. This statement is fully substantiated by a study of its history during the two hundred years since it first became recognized and was described. The disease was originally confounded with *rubeola*, and was not differentiated therefrom until the latter part of the Seventeenth Century when the great Sydenham revolutionized the prevailing belief and established its isolation and identity as a distinct and separate form of exathematous fever, with characteristics peculiarly its own. It was regarded in the beginning as a disease of mild and trivial nature, and in this respect it is common to quote the expression of Sydenham, which was destined by experience and observation so soon to be disproved: *Vix nomen morbi merebatur.*

After its specificity had been determined, it was observed that epidemic outbreaks of varying severity appeared both in Europe and America, and its strange peculiarities as such were especially noted and studied. Outbreaks were in some instances (and have been to this date), of such mild manifestation and slight mortality, although widespread as to prevalence, as to gain title to be called *benign;* others were attended by such extraordinary mortality that they were termed *malignant*, while others still were irregular—manifesting benignancy in one infected area with malignancy in one adjoining. So far as known, the invasion of this continent by the disease was begun in the year 1735 in the United States. Its spread was comparatively slow, but its severity increased to the extent that it is now universally regarded as the most treacherous and intractable as well as the most fatal of all the exanthematous fevers.

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*Read before the American Public Health Association.

It is not intended that this report shall make detailed reference to the peculiar phases in the epidemiology or the symptomatology of scarlatina. These historical references are introduced simply for the purpose of directing the channel of thought towards the principal object of this investigation, viz: the study of practical measures of prevention.

The prophylactic control and restriction of this disease probably presents more mooted and difficult questions than that of any of the other communicable diseases, or perhaps all combined. The *sub judice* condition of our knowledge concerning the specific contagious element places in a certain sense the stamp of empiricism upon our efforts at prevention, but observation, the application of well-known principles of science, and experimental experience have taught that it is entirely within the power of properly directed and thoroughly executed sanitary management to practically limit and satisfactorily control the epidemic influence, however mild or severe may be its potency.

It may be assumed that the following propositions have been universally accepted and established:

That it is a disease of childhood in a general sense; that it does not appear *de novo;* that it is transmitted by and through the human body; that it is ineffective in the highest degree and persistently so, as the infectious element is capable of reproduction after many months and even years under favorable conditions; that it may be conveyed by attachment to fomites of every description and in the most indirect manner (instances to illustrate which might be multiplied); that the virus does not readily become dissipated, volatilized, diluted or attenuated in such manner as to become innocuous; that it is capable of resisting all ordinary physical atmospheric changes, even when conveyed through variable climates; that individual susceptibility to the contagion cannot be modified by any known artificial means or by any conditions of life, but the mortality rate is very largely influenced by conditions of poverty with its depriviations, or wealth and its opportunities for efficient care and proper sanitary application; that one attack furnishes immunity almost invariably; that the infective element in all probabilty escapes from the body by the medium of the desquamative products which are detached from the skin and membranes during the progress of the disease, and thus may contaminate the air, and be absorbed therefrom by drinking water or milk; that satisfactory proof is still wanting of the micro-organic character of the contagium, although many facts and experimental studies point in that direction; that a very curious and interesting relation seems to exist between certain disorders of milk cattle and scarlatina, but the exact nature of the relationship has not been conclusively established, and the same may be said of the supposed biologic identity of the streptococcus infections which are theoretically made to include scarlatina because of its suppurative complications and sequels (the treatment of the disease by means of anti-streptococcic serum is the outgrowth of the latter theory, but conclusive results are wanting). That the scarlatinal poison seems to be capable in some manner of exciting germinative activity in pathogenic micro-organisms which may have found lodgment in diverse situations in the body, thus producing complications and sequelæ (e. g., the streptococcus pyogenes, bacillus diphtheriæ, etc.), is quite beyond question and may serve to explain much that has been said concerning the relation of scarlatina with the infections of pyemia, erysipelas, etc. No definite rule can be stated as to the period of time during which this disease may be considered contagious. Individual circumstances must always determine. Excepting the cases where complications prolong the danger of communication, the period of from four to six weeks is generally accepted.

With these desultorily stated facts and references in view, we come now to consider circumstances connected with the special inquiry of the committee, viz: The relation of "natural soils, water, excreta, refuse and sewage, houses, camps, ships, railway cars and direct contagion to outbreaks, together with practical measures for preventing the dissemination of the disease" under the conditions noted.

Scarlatina is not *naturally* an air-borne, a soil-borne or a water-borne disease. Beyond the strong probability that outbreaks may be greatly modified as to character and severity by the condition of the sub-soil, organic contamination of water and in a general sense unsanitary surroundings, there is no cogent reason for believing that when any or all of these circumstances are associated the relation is causative.

Imperfect disposal of refuse and excreta bears no such relation.

Unquestionably direct contagion by personal intercourse is the greatest agent in the production and spread of epidemic outbreaks.

Accidental contamination of water, milk, food, houses, camps, railway cars, etc., all point to personal intercourse as the prime etiological factor.

In this consideration, the paramount importance of the means for combating the epidemic influence, viz: *The prompt, complete and rigid separation of the infected from the uninfected during the entire period of infective danger, and the thorough disinfection of every person or thing that may chance by any possibility to convey the poison*, is readily suggested.

As a matter of fact, there is no disease the outbreaks of which can be more certainly placed under restriction and consideration, providing the means to that end are effectually applied. The burden, therefore, of this report must be an earnest plea for the perfect and efficient application of the well-known and universally accepted measures for the accomplishment of the object sought.

A *priori* this appears to be simple enough to be eminently practical, but experience has taught that great and sometimes almost insurmountable obstacles stand in the way of the proper execution of the necessary details.

The State, municipality, the municipal attendants, and the afflicted people themselves must co-operate in the most determined and intelligent manner in order that official direction, now quite generally promulgated even to the utmost degree of particularity, shall be faithfully carried out.

Mention should here be made of the often proposed isolation hospital system of management of epidemics of this disease in place of quarantine system now in vogue.

Such a scheme, if acceptably ordered, would doubtless prove an effectual factor towards restriction in cases where the conditions are such that home isolation and disinfection cannot be properly enforced.

We do not undertake, as it seems entirely unnecessary, to enter into detail in the matter of methods of disinfection. Steam and formaldehyde at the present time hold first place, and the means for their efficient application are considered and discussed as separate departments of inquiry by this Association.

We have only and finally to declare that the failure to totally eradicate scarlatina from the list of communicable diseases is not the fault of the principles of modern sanitary science, but to insist that it depends entirely upon the *effectual execution* of the same.

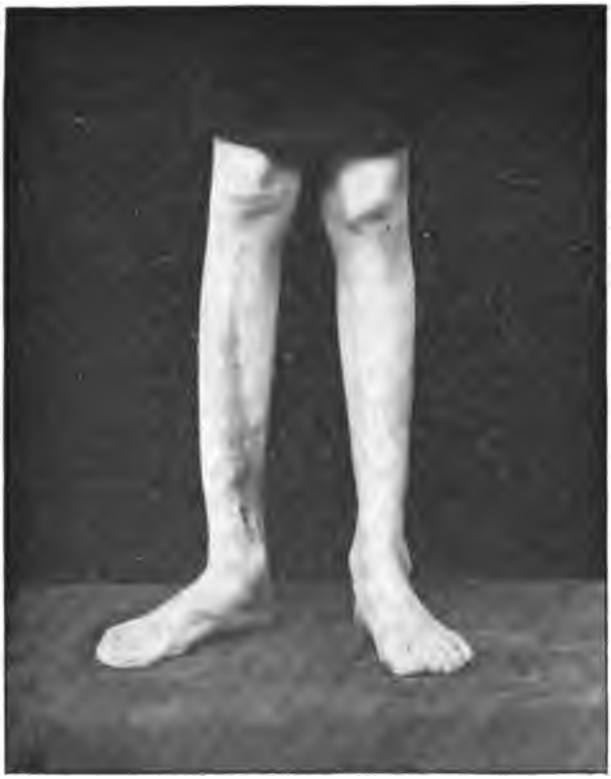
Palpitation of the Heart in Children.—L. D'ASTROS has the following to say on the above subject: While palpitation of the heart in the adult is very frequently induced by causes lying outside of the heart, we find that in children latent or semi-latent affections of the heart frequently make themselves felt for years simply by palpitaticn; to these may be added endocarditis, true mitral stenosis. Aside from true affections of the heart, which should be carefully sought for, in the first instance, digestive disturbances may also cause palpitation to a high degree (intestinal parasites), also an incipient (latent) pulmonary tuberculosis in young girls twelve to fifteen years of age at the beginning of menstruation, also chlorosis, and occasionally hysteria. It may also be induced by physical over-exertion (wheeling), by masturbation, etc. Only after all these causes have been excluded are we justified in making a diagnosis of nervous palpitation of the heart. The treatment is, of course, to be directed as far as possible in the first instance to the cause, in nervous palpitation over-exertion from all kinds of mental or bodily exercise (wheeling) is to be avoided, and hydrotherapeutics of moderate duration and degree should be employed, and not too cold. Next to hygienic advice, which is of great importance, the most useful medicines are bromide of sodium, in doses of 0.5 to 1.0 gr. twice daily, and tincture of valerian in doses of two to threc coffeespoonfuls.—*Annales de Médicine et Chirurgie Infantiles, 1898, No. xii. Der Kinderarzt, 1898, ix., 254.*

SPECIFIC NECROSIS OF SHAFT OF TIBIA—SEQUESTROTOMY—RELAPSE—CURE WITHOUT OPERATION.

By Henry Ling Taylor, M.D.,
New York.

A LITTLE GIRL, aged 9 years, was brought to me in the spring of 1895 in a desperate condition with a large foul ulcer above the right ankle. There was a history of syphilic infection at the age of one year, followed by secondary symptoms. About a year and a half before her visit she had bruised her right shin by a fall from a tricycle, and some months after the leg began to pain her, and later became ulcerated at the site of the bruise. As the leg continued to get worse, a sequestrotomy of the right shaft had been performed, by a very competent surgeon, in December, 1894, and a large sequestrum had been removed from the right tibia. Most of the wound healed within three months, but the lower part remained open. About six weeks before applying, the opening had ulcerated and taken on an unhealthy action, and the surgeon, who had previously operated, told her that amputation was necessary.

Examination showed that the child was anemic, very nervous, and in poor general condition. She was able to walk only on crutches, swinging the leg. The right leg just above the ankle was enlarged to twice its natural size, and there was a foul, unhealthy ulcer, three inches wide at its widest part and three and a half inches long. At the bottom of this sore bare bone could easily be felt, but no loose pieces. As the circulation in the foot was good, the patient was encouraged to try the result of local and general treatment. The sore was cleansed with peroxide of hydrogen and dressed with balsam of Peru. Iodoform in ether was applied occasionally. The patient was also put on Gude's pepto-mangan, and later on mixed treatment. Inside of a day or two the sore was free from odor, and the granulations had begun to take on a healthy action. As the patient improved rapidly, no operative treatment was deemed necessary, and she returned home in six weeks greatly improved, and with the ulcer about one-third its former size, and perfectly healthy. The treatment was continued by the family physician, and the patient made an uninterrupted recovery. For over three years this patient has been walking perfectly, with the ulcer entirely healed. The picture, taken over three years ago, shows the long scar on the right leg left by the sequestrotomy and the ulcer which was over the internal malleolus. The lower part of the leg diminished in size about one-half under treatment.



71 West Fifty-fifth Street.

LATERAL PHARYNGEAL ABSCESS FOLLOWING TONSILLOTOMY.

By Francis Huber, M.D.,
New York.

ELLA McC., 2 years of age, suffered from a post cervical adenitis when eight months old. The abscess was opened, and healed in a short time, leaving a small scar. Recurring attacks of cold in the head, with restlessness, induced the mother to bring the little patient to the Clinic (service of Dr. Jacobi) for further treatment. In addition to the chronic nasal discharge, the tonsils were very large; evidences of rickets existed; the general condition of the child was fairly good. In view of the large size of the tonsils, the large blade of a Tiemann tonsilotome was used. Some difficulty was experienced in getting away a section of the right tonsil; a smaller blade was then used, and the remaining portion removed without any further trouble—left tonsils resected next. The usual routine after-treatment employed—nasal irrigations with Bermingham's nasal douche, three times daily and hourly doses of tincture fer. chlor. (2 gtt.) in water.

The wound healed nicely. A few days later increasing difficulty in swallowing, some temperature, and rigid condition of head, with inclination to right side, were apparent. Considerable thickening of the tissues in the pharynx, laterally and to the right, was made out; subsequently suppuration occurred. The lateral pharyngeal abscess was opened as soon as fluctuation was evident, and the trouble in deglutition diminished. The rigidity of the neck persisting, and in looking for the cause, the attention was directed to the post cervical region. Marked tenderness and swelling at the site of the old scar was present; a few days later fluctuation appeared and the abscess was opened by an incision through the scar, a large amount of pus escaping. The drainage tube entered a distance of nearly three inches, the finger in the mouth showed that the distal end of the tube was in close contact with the wall of the pharynx. Dry dressings were applied, the tube gradually shortened, and a fortnight later the cavity was completely healed.

Retropharyngeal or rather lateral pharyngeal abscesses are of frequent occurrence during the first year of life. At this early age they are due to a suppurative inflammation in Henle's glands. At a later period they occur less often ; at times they follow one of the infectious diseases, as diphtheria, measles, etc. Now and then traumatic agencies or infection by foreign bodies, as fish bones,etc., induce suppuration in the pharyngeal sub-mucous connective tissue. In the case under consideration the trouble followed so quickly the operation upon the tonsils that there can be no reasonable doubt as to the cause of abscess.

Tonsillar resections are frequently performed; the above sequel is rare. Of a large number done at the Children's Department of the Vanderbilt Clinic, and in private, this is the only instance in which the accident occurred in the writer's experience.

In reviewing the history of the case and the subsequent course of the suppurative process, it does not appear that under ordinary circumstances any traumatism caused by the instrument, would be sufficient to induce the trouble in a fairly healthy child.

In one, however, who sometimes previously had had a severe post-cervical abscess, the traumatism seemed to light up a new inflammation along the tract of the original abscess. This view is strengthened when we remember that though the lateral pharyngeal abscess was opened internally, the suppurative action nevertheless extended outward and pointed in the post-cervical region, directly under the scar of the former lesion.

EDITORIAL COMMENTS

Professional Jealousy The average layman never has the shadow of a doubt that the peculiar hostility exhibited by the practitioner of medicine towards quackery, sectarianism, specialism, etc., etc., is an example of pure commercial jealousy. It is, perhaps, natural that he should cherish this view, for even the enlightened jurist or divine holds about the same opinion in this matter as the illiterate or half-educated member of the community. It is looked upon as something axiomatic, and any argument to deny that physicians are a commercially jealous class would be regarded as the acme of sophistry.

Nevertheless we believe that a very little reflection would cause the most prejudiced to hesitate in the attempt to saddle commercial modes of thought and action upon the members of a liberal profession. Let us take an example of frank commercialism and then endeavor to parallel it out of our own professional life. Take the retail trade—the grocery dealer will serve our purpose. Let us suppose that in a thriving community a new grocer appears and makes a bid for patronage. Which, out of the established grocers, are most apt to betray commercial jealousy of the new-comer? Is it the successful dealer who has built up a solid business, or is it the younger men, the more recent accessions, the unsuccessful retailer who just manages to keep his head above water? We think all will agree that in a matter of this sort—other things being equal—the established men exhibit jealousy in proportion to the amount of damage they experience from the new comer. The grocer who has succeeded in his business, who has acquired a modest competency, is master of the situation, and whatever happens he is not to suffer long. He is always prepared for such contingencies, and his manner does not betray any jealousy of new rivals. He can sell out at a good price, or cut prices or take any one of a dozen steps to protect himself or his business. It is the small fry, whose scanty margin of profit is imperiled by the new accession, who cannot dissemble the jealousy and hatred they entertain toward the man who appears to take the bread and butter from their families. Now, take a parallel case in medical practice: Suppose a new comer, possibly a charlatan or an aggressive, unscrupulous man competes for some of the practice of a community already well supplied with practitioners. What class exhibits the greater degree of hostility in this case? It is the young, struggling novice, or the man who has never got beyond a very modest practice? Or is it the successful physician who has acquired an extensive following and a competency? Allowing for a share of exceptions, we believe it safe to say that the latter class, as a rule, are more prone to attack the new comer and throw obstacles in his way than are those who, being most damaged, have a better warrant for such a course from the purely commercial standpoint. This is surely not commercial jealously. There is indeed a very intense feeling at work here, but it is quite unlike commercial jealousy. We believe that every regular practitioner, irregular practitioner, sectarian or specialist, entering a new community in search of practice, will tell a common story, to wit, that four-fifths of the opposition encountered proceeded from the class least damaged from the commercial standpoint. What is the nature of this feeling which involves hostility without being akin to commercialism? Clearly it is something almost absent from the young, struggling practitioner, but which grows upon him with years and success, and finally becomes inveterate. It is akin to the *odium theologicum*. A Baptist is not jealous of a Methodist if the latter worships in a church a little better than his own; but he may feel uncharitably disposed towards him for some reason growing out of differences in creed. The dislike felt by the medical practitioner towards some of his fellows may be intolerance, but is quite likely to be righteous indignation. It depends upon the information and judgment possessed by the physician. It was sheer intolerance, however honestly meant, to attempt to ostracise a man like Dr. Horace Green, the founder of laryngology ; but the feeling entertained by regular practitioners for the unspeakable cancer quacks, now happily banished by wise legislation, or for the abortionist, can only be described as righteous indignation. We believe that this latter emotion is the true primal feeling, which the seasoned practitioner gradually develops towards pretenders, swindling practitioners, notoriety seekers, and the like, and that through neglect to duly inform himself, he allows this feeling to extend to many deserving individuals whose opinions may differ from his own; but we see nothing here which bears any taint of commercial jealousy.

"Schools" of Medicine

Probably nineteen-twentieths of all individuals who practice medicine have a deep-seated antipathy to all terms and ideas which imply separation from the main body of practitioners. Aside from this inherent, prejudice, misconceptions regarding terms contribute to still further augment the hostility; so that if the profession had had years ago a clearer notion as to what is meant by such terms as "school" and "specialty," a vast amount of ill nature and antagonism would have been avoided.

The current notion with regard to a "school of medicine" is that doctrinal differences are implied. A collection of physicians is called a "school" because it teaches and believes something peculiar. Nothing could be more unreal or more absurd. A "school" must always be made up of a teaching body or individual, the pupils, the place of meeting and objects necessary for imparting instruction. The term "school" has primarily a purely geographical significance. Differences in the teaching, which appear to be inevitable, are nevertheless only incidental. It came about that in Paris, where the medical teaching is centralized in one university, there existed a hospital devoted to the treatment of skin diseases, long before any other metropolis possessed a similar institution. It naturally resulted that there was a special centralization of instruction at this hospital with inevitable advances in our knowledge. Books and atlases were published by the attending physicians, and a world-renowned collection of wax models was begun and continued. Thus the so-called French "school" of dermatology came into being, and students from all parts of the world flocked to it tor instruction. At a later period the dermatological material in Vienna was similarly centralized, with similar results. Able teachers and assistants, having charge of the centralized material, added greatly to our knowledge; pupils were drawn to Austria, and the so-called Vienna "school" of dermatology came into being. That the Viennese professors came to hold views which differed from those of their Parisian colleagues, was merely episodical. Nevertheless probably the great majority of practitioners think that the Vienna "school" is so called because of its peculiar teachings, to wit, that skin diseases are independent affections which require only local treatment. In general, we may say that the primitive meaning of "school" is any teaching body with a local habitation and teaching facilities; and that in a secondary sense whenever the clinical material is unusually rich and abundant, and the teaching body unusally able and original, so that a large attendance is attracted, a "school" may be said to arise; but that any idea of teaching at variance with the views of the profession at large is entirely foreign to the occasion. If a man publish views upon purely speculative subjects, and if a number of people are won over to his way of thinking, this aggregation of followers may be called a school by courtesy alone. Medicine is no longer a matter of pure speculation, like theology and philosophy; and the necessary connection of "school" with belief should be abrogated.

"Specialties" in Medicine

On the other hand, the terms "specialty" and "specialism" imply inherent differences in practice. We do not refer to the so-called regional subdivisions of medical practice into ophthalmology, neurology, etc., etc. This we regard as simple limitation of practice, and there are many ways in which practice may be restricted to certain classes of work; but to avoid confusion, this limitation ought not to be termed specialism. The notion of specialism in medicine should be restricted wholly to the habitual employment of some principle which the practitioner regards as of the greatest general efficacy in curing disease. The average physician likes to represent himself as using a variety of principles to suit different cases; but, as a matter of fact, one man does not possess sufficient versatility to profit by all the methods which are able to cure diseases. Hence we find men, of the greatest ethical probity, who become enthusiasts over some particular mode of treatment, or, in other words, specialize their practice. We may find more than one well-rounded and well-balanced man of science who believes that hydriatry, properly understood and applied, will do the greatest good to the greatest number. Several of the leading lights in medicine have the same faith in a proper knowledge of electrotherapy. A third class believes that hypnotism will do all that surgery cannot do. This is specialism, and if the adherents of hydriatry, hypnotism, etc., choose to get together and hold meetings no one now-a-days would call them a "school." Because of the tendency of the laity to believe in panaceas, the profession is opposed to any remedy or therapeutic principle for which too many virtues are claimed. Yet it is surely well to know the utmost limits of activity which any remedy or principle possesses. The therapeutical range of thyroid preparations appears to be so extensive that the claims made for them savor of a commercial panacea. Yet there is material here ample enough to occupy the best energies of a good man for years, and if any such person chooses to devote himself to these preparations for his life-work he should not be termed a commercialist, or a self-advertiser or a hobbyist. A study of the various thyroid preparations, of their administration under the most varied circumstances and in various modes of exhibition, of the synergists and antagonists, contraindications and toxicology undertaken by one investigator as his life-work would be of enormous value to physical science. Such a man would be a specialist in the best sense of the term. Some drawbacks might come about naturally—our specialist might get a little remiss in his knowledge of outside medical matters; he might be sought to treat people who had faith in him even if his remedies were not indicated in their disease; but all in all these drawbacks would weigh very lightly against the good he might do in his chosen field. It is thus readily seen that any remedy or principle of wide adaptability may be made the subject of special practice. It is not necessary that more than a small portion of our profession should devote themselves to this special work, which is for the benefit of the profession at large; nor are there many subjects in therapy worthy of such excessive devotion. Hydriatry, electhrotherapy, hypnotism, certain diet and movement cures, balneology, and perhaps serotherapy and organotherapy (thyroid products at least), are of wide applicability and unlimited possibilities. Let us not be too suspicious of commercialism in connection with the specialization of practice.

Head or Figurehead?

It is conceivable that a devout Christian woman, with a belief in the divine origin of her "mission," might found a religious sect; and that, in common with many other religious sects, seeming miracles of healing might be worught through the faith of the believers. When, however, the visible head of a sect of this sort exhibits a financial ability suggestive of the manipulation of a syndicate of professional capitalists, the casual observer may well stand aghast at the prodigy of such a combination of saint and plutocrat. It is true that devoutness and dollar-getting are not incompatible, but adequate business training has always been a neccessary requirement for the accumulation of millions ; and in the absence of such a preparation the casual observer ought to be pardoned for imagining that the "head" of the new sect could be no more than a mere figurehead for a number of shrewd money-getting men. We do not, in this connection, refer to the fees charged by "healers." For if the ministrations of these functionaries are really a part of the offices of the church, it is as consistent to accept fees for healing as it would be in the case of weddings and other ceremonies provided their operations are restricted to members of their own faith. We refer to the financial ability which can divert into coffers of the promoters a million (?) dollars obtained from the sale of a book published at nominal cost; and of a corresponding sum, perhaps, obtained from the sale of souvenir spoons; to say nothing of the thousands received annually from tuition fees, revenues from magazines, etc. Certain capitalists "like" medicine as an investment. Modern financiering is a game of grabbing the profits of others. Vast profits are derived from the sale of proprietary remedies, and from the legitimate trade in drugs. What a grand scheme to persuade people that all drugs are useless and injurious, and then to further persuade them to buy our books and mascot spoons, and to pay preposterous fees for a few weeks instruction in Science Healing! Of late years the woman figurehead has done good service for medical capitalists. There is the mythical Mrs. Pinkham, for example; and there are a half dozen women figureheads for alleged cosmetic and hygienic remedies. Capitalists unblushingly hire a good-looking woman in her twenties to tell other women that she is forty years old and keeps young by using the many high-priced cosmetics which bear her name. Advertising does the rest. The ostensible head of the scientists similarly tells, her following how to be healthy and wise. It is far from unlikely that a few years hence, when the Christian Science fad shall have been superseded by newer medical fads, the fact will come to light that this head of the Scientists has been either the dupe or confederate of one or more shrewed capitalists.

Operative Treatment of Laryngo-Spasm has been frequently resorted to by K. HUGEL (Bad Münster) by ablation of the uvula. There are a number of children suffering with stubborn spasm of the glottis where no other etiology can be discovered but an elongated uvula, and when this is shortened (by only a few millimeters) a cure may be accomplished. The operation is not serious, and the wound heals in a few days.—*Münchener medic. Wochenschrift*, 1898, No. 40.

Dr. RUD WEIL (Berlin) recommends a little manœuvre by means of which subcutaneous injections may be made perfectly painless, which is of especial importance in children. While the needle is, as a rule, stuck or bored into the skin, the author attempts to project the point rapidly through the cutis. He seizes a large fold of the skin and firmly compresses it between the index finger and the thumb of the left hand. He then takes the charged syringe like a pen at the lower end of the glass barrel and rapidly propels the point of the needle by a sudden movement of the wrist (the arm remaining perfectly quiescent) through the thick skin. In this manner the prick of the needle is not felt, as a rule. This procedure can, of course, only be carried out on parts of the body where large folds of skin can be raised.—*Allgem. med. Central Zeitung*, 1895, No. 91.

SOCIETY REPORTS

Sixty-Seventh Annual Meeting.

BRITISH MEDICAL ASSOCIATION—SECTION FOR DISEASES OF CHILDREN.

PORTSMOUTH, AUGUST, 1899.

President—EDMUND OWEN, F.R.C.S.

Vice-Presidents—JAMES GREEN, M.R.C.S., DAWSON WILLIAMS, M.D.

Hon. Secretaries—ALFRED H. TUBBY, M.S., London; GEO. AUGUSTUS TULLIS, M.D.

WEDNESDAY, AUGUST 2.

Discussion on the **Treatment of Ununited Fracture in Children.** To be opened by the President.

Mr. OWEN, in opening the discussion, said he would not, as president, make any preliminary remarks on the advance of the study of Pediatrics during the year, but would proceed at once to the subject under discussion. He would speak especially of ununited fracture of the tibia and fibula, and would discuss why operative treatment so often ends in amputation. Although in these cases the tibia and fibula are almost always the bones affected, the condition might occasionally occur in other bones also. Thus he had seen a case of ununited fracture of the clavicle in a child. The femur, so often the site of pseudo-arthroses in the adult, is very rarely so affected in the child. The only case of the kind that had ever come under his notice, recovered after prolonged rest. The almost invariable fatality of operative treatment in such cases is probably the explanation of the paucity in the number of published cases.

The first work on the subject is Sir James Paget's, who, in "Studies from Old Case Books," published in 1891, gives an account of three cases. These are, briefly:

1.—Fracture in infancy; non-union; eventual amputation at the age of 15 years.

2.—Fracture in infancy; well set; union gave way; everything possible in the way of operative interference tried unsuccessfully; eventual amputation.

3.—Bent leg of child broken by bone-setter; wiring of no use; eventual amputation.

It is not easy to imagine why union should not occur. Is there, in these cases, some atrophic condition of the bones at the site of the fracture? If so, the failure to remedy the defect is explained. Will the X-rays give us any assistance? In some of these cases the fracture occurs *in utero*. More often it occurs later, and from slight violence. Hence, it is often not recognized, and so, possibly from want of rest, the child being carried about, pseudarthrosis occurs as it does in the adult.

In the case of pseudarthrosis of the humerus and femur in the adult, excision and wiring are almost always successful. In the child the tibia and fibula are affected, and after wiring only fibrous union is obtained, and hence the necessity of ultimate amputation. Some have supposed that want of proper treatment was a sufficient explanation. Thus, Dr. Warren, of Denver, writing in Keating's "Encyclopedia of Diseases of Children," says: "In the Warren Museum there are three specimens singularly illustrative of the effects of neglect of fracture of the leg in early life. The bones form an angle salient forward, and the lower fragments are crowded down close to the foot. In two of the cases, bony union failed to occur, and in one, amputation was finally resorted to." He also refers to the case of a boy, aged 14, in whom union failed to occur, after removal of a wedge of bone from the seat of an old fracture in the leg, and he refers to a case, reported in the *Lancet*, for June, 1862, in which, after the broken tibia of a boy had been treated by the introduction of ivory pegs, amputation was subsequently done, when the lower fragment was found to be atrophied. This reference to the occurrence of atrophy is very important.

Mr. Holmes refers these cases to the want of early diagnosis, and want of proper treatment? But would this explain the failure of operative treatment. How is it that pseudarthrosis almost always follows in children, never in the adult?

It is important to note that in some cases bending of the bone had been observed before the fracture occurred. This indicates that some change had been going on in the bone. In such cases, be very cautious how you undertake the straightening of the bent bone. It is suggested by Sir James Paget that some change, comparable to mollities ossium was going on in the bone. In the speaker's cases, the upper end of the fragment was often poor and spindle-like. But why should only one bone be affected, leaving the others healthy? Some other theory is needed to account for this.

The only theory suggesting itself is that of some condition affecting the trophic nerve, hence he would suggest that there may be some change in the cells of the spinal cord, comparable to that occurring in infantile paralysis, but extending its influence on the bone, rather than on the muscles. This theory can only be proved, or disproved by an examination of transverse sections of the cord in such cases, and an opportunity for doing this is not likely soon to occur.

No case is known to the speaker of cure of this condition by operation. The bending straight of a bent bone may be followed by pseudarthrosis. Is it not likely that in these cases there has already been some change in the bone? There is no reason to think of any underlying constitutional condition, such as rickets or scurvy.

For discussion, he would suggest the following points:

1.—Why do the tibia and fibula break, perhaps from very slight injury, as when a child is pushing a chair along the floor, when every other bone is sound?

2.—Why does failure to unite take place, even with proper treatment?

3.—Why does operative treatment, so successful in the adult, fail in the child?

4.—Has any operator had a successful case? All the speaker's cases have completely failed.

Mr. MORGAN said that he had seen only one case, 14 years ago, which completely bore out Mr. Owen's remarks. The fracture occurred from slight injury, and the case was admitted to Winchester Hospital, immediately after the accident. Union failed to take place, and the child was sent to Brighton. The fibula in this case was absent, with the exception of a small part of the external malleolus. The case was under treatment in the hospital at Brighton for over a year, and was operated on five or six times. Every attention was paid to fresh air, etc., and the child looked the picture of health, yet the operations were entirely without effect. It was not known what the ultimate result of the case was; probably amputation.

Mr. Tubby remarked that the operation for ununited fracture in children is not one to be undertaken lightly, and ought not to be done if there was any reason to suppose that the bones were soft. The suggestion of trophic changes was new to him, and was, he thought, worth following out. He had only seen one case. In this, operation failed to relieve the condition. Living rabbit's bone was inserted, and this also failed. After amputation the whole bone was found to be in a condition of fatty degeneration, thus obviously explaining the failure.

Mr. Owen thanked the gentleman who had spoken, and called on Dr. Robert Maguire to open a discourse on **The Treatment of Pleural Effusion in Children.**

Dr. Maguire said he was limited to the consideration of the *medical* treatment of the condition, but he would include simple puncture under this heading. He was limited also to the consideration of *treatment*, and to the treatment, moreover, of the condition as it occurs in *children*. Lastly he limited his remarks to the treatment of effusion resulting from *inflammation*. Passive effusion was not under consideration. The first thing to do in a case of this kind is to make use of the needle to ascertain the nature of the fluid present. This operation involved no danger, and there need be no pain. The needle should not be too small nor the solution prove too feeble. He preferred to make use of the aspirator, and was then able, if the effusion was serous and sometimes even if it was purulent, to empty the cavity. Supposing the fluid to be serous and not much blood-stained—great blood-staining makes me think of sarcoma, a rare condition. Pleural effusion is essentially an active process; not passive, like hydrothorax. The pleural epithelium is irritated. This is still more the case in empyema. The leucocytes are active bodies, and one must use logarithms to calculate the energy of the action. In children the ribs are soft, and the rib spring is not so great as in adults, hence there is less tendency to the development of a positive pleural tension. Very rarely is there positive tension in children when the effusion is simply serous. If pus forms, the tension becomes positive, as indicated by bulging of the interspaces and depression of the diaphragm and spleen. The appearance of these signs is an important guide to the development of positive tension, and therefore an important indication of the presence of pus; only one must take care not to be misled if an enlarged spleen. Displacement of the heart is not important. The heart does not get *pushed*, but is drawn aside by contraction of the opposite lung, and this may occur quite easily. When there is positive tension, there may also be engorgement of the veins of the neck.

Tubercle is rarely the cause of effusion in children. Sir W. Jenner asserts that it is a frequent cause in empyema. This has been recently denied, but the statistics published were not reliable, as innoculation was not tried. In the serous cases tubercle is rarely present, but it may be. In such cases one should not interfere, even in adults, as interference may be followed by a spread of the disease. It has been suggested that the relief of the lung may lead to increased circulation through it and to increased activity of the tubercle bacilli. This, however, may be improbable. It has also been thought that an antitoxin was proeuced and absorbed from the fluid. This also remains to be proved.

When, therefore, the case is tubercular, the great point is to maintain the general health. Small doses of gray powder were, he thought, often very useful, although this is only old-fashioned treatment.

If the fluid be purulent, one should try to find the source of the infecting material. In many of these cases pneumococci are present; in some the ordinary strepto- and staphylococci.

Although there can be no doubt of the value of the operation for adenoids in suitable cases, he thought surgeons were not thorough enough in the operation nor sufficiently capable in preventing sepsis. For example, if a patient suffers from suppurating middle ear disease, I should not allow a surgeon to operate

To get rid of pus, we require surgical interference, as a rule. Pulmonary aspiration does sometimes lead to absolute cure, as in a case the speaker saw recently, where the parents objected to operation. There are cases also where operation cannot be performed. Thus, in a case now in the Brompton Hospital, after operation, a second empyema developed on the other side. This is doing well under repeated aspiration.

The danger of leaving the case alone is not so great as in the case of the adult. Only two other points need be mentioned: First, pus may develop between the lobes of the lung. These cases are difficult to diagnose and may be mistaken for tubercular disease until the fluid bursts into the general pleural cavity. Second, fluid present in cases of pneumo-thorax need not be purulent. We are often too ready to operate in such cases. Many do well if kept quiet and well nourished.

Mr. H. Belham Robinson discussed the question from the surgical point of view.

1.—*Fluid Serous.* It is not necessary to draw off all the fluid. If some is drawn off the rest may be absorbed. Attend to asepsis. Draw off the fluid slowly and stop if there is pain or if the fluid becomes blood-stained. Should we incise when the fluid is clear? This may be done in cases of re-collection of the fluid. Such cases, however, are usually either tubercular or sarcomatous. The latter is rare and the fluid is blood-stained. In tubercle, incision has been recommended, but general experience seems to be against it.

2.—*Fluid Purulent.* The fluid should be removed as soon as possible to allow the re-expansion of the lung; (*a*) if the effusion is general an exploratory puncture should be made. Aspiration alone may be successful, especially if the fluid is thin; (*b*) incision and drainage.

Site of Incision.—The fifth space below the nipple at the termination of the lateral intercostal muscle has been recommended as the point of spontaneous evacuation when this occurs.

Mr. Godlee inclines to the ninth space below the angle of the scapula. Personally, in 100 cases, he had incised in the fifth space in the wide axillary line and has had every reason to be satisfied. If the incision is made at the lowest part collapse occurs there, and the upper part remains as a bag of pus.

Should We Irrigate? Not as a regular practice. If the fluid is fetid we may irrigate, using sterilized water gently so as to avoid the production of positive pleural tension. Frequent irrigation as a routine practice has been advocated by Dr. Robertson, of Oldham, who inserts two tubes at different levels through small openings. The fluid is removed by syphonage, and irrigation carried out when necessary. He claims that expansion takes place more rapidly, and that he is able to gauge the amount of expansion.

He, Mr. Robinson, thought that entrance of air into the cavity was not really a disadvantage. It did not necessarily cause collapse of the lung, which, indeed, might come up to the surface during the operation. Then it is an advantage to be able to explore with the finger.

How long should the tube be left in? The tube is often left in far too long. If it is found daily lying on the dressing, or if the daily discharge is not over 1 ounce, the tube may be removed. It can easily be reinserted if necessary.

What should be done if the cavity fails to close? This is not so common in children as it is in adults, owing to the rigidity of the chest wall. A fibrinous layer may form and bind down the lung preventing re-expansion. If this takes place, the only way to close the cavity is to diminish the rigidity of the chest wall, and this may be done according to the requirements by removal of a portion of a rib, up to multiple resection after the method of Estlander. This, however, is seldom necessary in children. As points for discussion, the following might be suggested:

1.—Has free incision and drainage any value in tubercle of the pleura?

2.—Has aspiration any value in empyema?

3.—Should we irrigate or not?

Mr. Owen regretted that Dr. Maguire thought the services of the surgeon might be so lightly dispensed with. There is a great tendency among physicians to do operative work and this should be checked.

He would like to ask if there were not cases where the the surgeon might open, evacuate, and close the wound. He thought there were. How were these to be recognized? It has been suggested that in tubercular cases one should not be in a hurry to operate. Dr. Maguire and Mr. Robinson had laid it down that free incision should be made if the fluid was purulent. But in tubercular cases may the fluid not sometimes be only apparently purulent. It is so in cases of psoas abscess. It may not be possible at the time of the operation to tell whether one is dealing with a fluid tubercular granuloma or with pus. If the former, in cases of psoas abscess, the surgeon does not hesitate to close the wound immediately. Why not in empyema?

Where should we incise? Well, not too low, say in the mid-axilla in front of the angle of the scapula. The exact point is not of much importance.

Should we remove a portion of rib? Yes, always. It does not add materially to the danger of the operation.

Should we irrigate? This is not needed, but may be done if sepsis occurs.

As to removal of the tube, by all means remove early. As Mr. Robinson says, it can, if necessary, be reinserted.

Had Mr. Robinson ever known of a tube getting adrift in the pleural cavity? He had. Such cases were not much talked of, and were very awkward cases when they occurred. They might occur from a silly fashion of fixing the drainage tube with a safety pin. The drainage tube should be provided with a flange, so that this accident could not occur.

Mr. Tubby said that we had been long aware that during irrigation sudden collapse might occur, the patient suddenly falling back dead or dying. He had made experiments on this subject, but had not published his results. Briefly, he believed that the amount of pressure was important. If, with a manometer in the carotid, you force fluid rapidly into the pleura, there is an instantaneous fall in blood pressure, which may be fatal. As to the kind of fluid, sterilized water and boracic acid solution produced no effect. On the other hand, with solution of carbolic acid the blood pressure fell straight down, and seldom did it recover. The same was true of iodine.

He therefore felt strongly that irrigation was not to be advocated, even in cases of fetid effusion. We cannot provide against the contingencies that may occur. There may be an intensely sensitive pleural reflex, sudden fall of blood pressure and stoppage of the heart.

We cannot tell beforehand when this may happen, and we should therefore simply see to it that the opening is quite free and that the fluid can easily escape.

Dr. STIRLING asked whether the injection of formalin and glycerine, which had been found useful in the case of joints, had ever been tried.

Dr. G. F. STILL said that the rapidity with which the fluid was drawn off was of great importance. After rapid removal in the adult, serous expectoration may occur, and be so profuse that the patient is in danger of being drowned in his own expectoration. Such cases have not been described in young children, but recently in Great Ormond Street there had been very profuse expectoration for some hours after aspiration in a child of ten.

It had been asked whether in cases of empyema operation might not be deferred a little to see how long things would go. Post-mortem results show that such a course is quite unjustifiable. So long as pus is present, there is a pure culture of pneumococci in the pleura, and danger of death from dissemination. This is by far the most common cause of death. Thus in twenty-eight consecutive examinations he had found in

10	suppurative pericarditis
5	" meningitis
4	" peritonitis
1	suppurating joints

There was a certain amount of overlapping in these figures. Pure cultures can be got from all these foci. Therefore in all cases we should operate without delay.

The objection to aspiration is that we are sure to leave behind some thick lymph which may be swarming with pneumococci.

In reply, Dr. MAGUIRE said he certainly agreed that if pus was present we should operate at once, but there were cases where one could not operate, as he had already said, and in these he would aspirate. He thought the aspirator was a physicians instrument. A physician invented it, and he thought the surgeons might allow the physicians to keep it.

Mr. Robinson said that in one case on which he operated the lung rose to the surface, so he did not insert a tube, but closed the wound, and the case did splendidly.

He thought that in tubercular cases, if the fluid was simply broken down, tubercular material, we might treat it as a psoas abscess.

Irrigation is not on the programme at all. If ever resorted to, it should only be fetid cases.

As to injecting formalin, he thought the less we injected into the pleura the better, and he would limit injections to sterilized water and boracic lotion.

Dr. G. F. Still (London), read a paper on "**Observations on the Morbid Anatomy of Tuberculosis in Childhood.**"

In 1,728 consecutive post mortem examinations in children Dr. Still found tubercle present in 269, though in many of these cases death took place from other causes. Tubercle was most frequent during the first two years of life, and as these were the years when milk formed the main article of diet, it was natural to look upon it as the main source of infection. But he found that the lungs were affected even more often than the intestine; and seeing that young children swallow all their expectoration, frequent intestinal infection was only what one would expect.

The condition of the lymph glands was only important as indicating the sequence of infection, and much more reliable than the clinical history. Following out this idea, he had come to the conclusion that in his cases infection had occurred through the lungs in 138 cases, and through the intestine in 63. During the first two years of life, the predominance of infection through the lung is greater than at any other period. In 15 cases, infection had occurred through the ears, and 13 of these were under two years of age. These might be grouped with lung cases, being respiratory in origin.

When death is due to some other cause, one may find a single group of lymphatic glands affected and healed. Of 43 cases of this kind, 25 indicated infection through the lung, 16 through the intestine, and 1 through the ear, again showing the importance of the respiratory passages.

These figures seem to indicate that milk is not the chief source of infection in childhood, and although one cannot be too careful as to the purity of the milk supply, one must also emphasize the great importance of fresh air and proper hygienic condition.

Mr. OWEN asked how the bacillus was affected by digestion ?

Dr. STILL replied that the bacillus must be able to pass through the stomach to cause intestinal tuberculosis. Nevertheless tubercle of the stomach was extremely rare. He had recorded five cases, so far as he knew, the only cases reported in England.

Mr. MORGAN, F.R.C.S.E., read a paper on "**Tuberculous Adenitis in Childhood.**" He confined his remarks to the glands of the head and neck, and said that the first thing in examining a case was to find the source of infection. Those glands which drained mucous surfaces were most liable to infection. Prophylactic treatment was very important. All milk should be boiled. The child should be kept away from sources of infection. The gums, tonsils, pharyna should be examined frequently, and the teeth caretully attended to. If the glands become enlarged, general treatment had to be attended to. Hydrarg. cum creta might be given for a few days, followed by a dose of cod liver oil, syrup of the iodide of iron. For the treatment of the throat and tonsils, he recommended especially a paint containing iodine, iodide of potassium and glycerine. If the glands continued to increase, surgical treatment became necessary. In operating it was important not to press upon the glands, as this might lead to subsequent enlargement of other glands.

Mr. ROBINSON thought Mr. Morgan was to be congratulated on the stress he laid on the importance of finding the cause and applying local treatment. One often sees cases of adenoids and enlarged and softening glands. In such cases he would treat the glands first, not both at the same time. If the glands were simply enlarged, he would treat the adenoids, and wait to see what would happen to the glands. He must admit that sometimes the glands got worn.

(*To be continued*).

PRACTICAL NOTES

The Treatment of Variola by Ichthyol.—HOERSCHELMANN says that variola, from a therapeutic point of view, is distinguished from other acute exanthemata, morbilli and scarlatina, by the fact that the skin affection must also be locally treated. The greatest danger to the patient is present during the stage of suppuration, the diminution or total suppression of which would greatly diminish the dangers of variola. For this purpose a series of external remedies have been recommended, for example: Ungt. ciner, collodium, lapis, iodine, carbolic acid, etc.,but none of these withstood the test of time. On Kolbassenkos's recommendation Hoerschelmann used ichthyol in variola with very favorable results. Its action consists in greatly alleviating itching on the appearance of the papules or postules and diminishing the sensibility of the whole skin area attacked. Fever during the stage of suppuration is also slight, below 39.5, suppuration is suppressed, the stage of suppuration and falling of the crusts is reduced in three or four days, great inflammation of the sub-cellular tissue does not occur. Painting the whole body with ichthyol was also well borne by children. Kolbassenko makes use of an ointment consisting of ten parts of ichthyol to eighty parts of vaseline or lanolin and ol. amygdal. dulc. Herschelmann uses ichthyol-collodion in place of this ointment in treatment of slighter cases of variola in children. He found that twenty-four hours after ichthyol was applied in this manner the pustules which had been treated in this manner took their usual course. The falling of their parchment-like scales also occurred rapidly and did not leave behind inflammatory changes of the skin. The spots from which the scales had fallen were always left dry and covered with a delicate reddish epidermis. According to this experience ichthyol may well be recommended in the treatment of variola.—*St. Petersb. Med. Wochenschr., 1898, xxiii., 283.*

Tying the Umbilical Cord and the Resuscitation of Apparently Still-Born Children.—SCHWALD, in this essay, protests against the very early tying of the umbilical cord in the new-born. Should a perfectly normal birth be left to nature the following would take place: As soon as the child has been expelled by the uterus, it begins to breathe deeply in consequence of crying. In this manner the lungs are expanded and filled with blood, which reaches the circulation by the umbilical vessels. Finally nearly all the blood will have been pumped from the placenta into the child by the action of the lungs, and pulsation ceases in the umbilical cord. The time consumed until pulsation in the umbilical cord ceases does not represent only one to two minutes, but, as a rule, half an hour; where the children breathe badly and where after-pains are weak, the pulsation of the umbilical cord is much longer delayed. If the cord is tied too early, the full amount of blood is prevented from passing into the infantile organism and the new-born baby becomes anemic. The fact that a large quantity of blood enters the child's body as long as the latter is still connected with the pulsating umbilical cord can be demonstrated by its weight. In a case, observed by the author, the increase of weight during this time was 85 g., in another case as much as 118 gr. We are able, however, simply by sight, to observe how the skin and mucous membranes of the child becomes more and more reddened with every pulsation of the umbilical cord, how the previously thin and wrinkled members swell out, become rounded, and the face becomes fuller and larger. It is therefore the duty of every physician and midwife to postpone tying the cord until it has totally ceased to pulsate for several minutes. The placenta is also much easier removed if we follow this rule, for it is much more easily loosened after it has shrunken from the loss of blood. It is of the greatest importance, however, in seemingly still-born infants, that the umbilical cord be not at once tied. The text-books maintain, in spite of this, that seemingly still-born children cannot have their cords tied early enough, so that we may proceed with artificial respiration. In this case we are certain to have a very anemic and therefore weakly child, as respiration has not yet occurred which, as stated, carries the greater portion of the child's blood from the cord to the child itself. The resuscitation of the apparently still-born is very rare in those cases where the umbilical cord has been prematurely tied; for the life-giving element the blood is practically absent and the respiratory centre and the lungs especially feel its want. We would gladly transfuse human blood into apparently still-born babes if we could. This transfusion is best accomplished by leaving the pulsating umbilical cord intact. In cases also where the pulsation of the umbilical cord had been temporarily prevented, as in difficult pelvic presentations, the pulse returned again if the vessels of the cord had been carefully protected. The umbilical cord of apparently still-born children should therefore never be tied immediately after birth, but the circulation of the heart and the respiratory centres especially should be stimulated by hot applications over the heart and neck and artificial respiration by means of raising and lowering the arms may then be employed while the umbilical cord still pulsates. In this manner the blood of the child is allowed to pass from the placenta into the lungs in the best manner, and resuscitation will soon be followed by success even in cases which were hopeless when treated by the common method. The author was able in this manner to obtain perfect results.—*Deutsch. Med. Wochenschr.*, *1898*, *xxiv.*, *573.*

ABSTRACTS

ON DWARFISM AND RELATED GROWTH DISTURBANCE.

JOACHIMSTHAL (*Centralblatt fur Chirurgee, 1899, xxvi., 115*) spoke in the Fr. Vereinigung der Chirurgie, Berlins (14, xi., '98), of his experience, gathered from transillumination with the Roentgen rays,of patients suffering from growth disturbance, demonstrating Roentgen pictures at the same time. The objects of his research were, in the first instance, a series of individuals affected with the so-called dwarf-growth (zwergwuchs), namely well proportioned, mentally normal persons, who had, however, remained small. Although the age of these people varied between thirty and thirty-six years, thus corresponding to a period in which normal growth has already long ago ceased, nearly all of them positively asserted that they were still growing more or less. And in truth Joachimsthal found the epiphyseal cartilage distinctly present in six out of eight who were examined, and in other respects also did the bones correspond fully to the childish character.

Another 12-year-old patient, suffering from the disease formerly designated in general, "fetal rachitis," and by Kaufmann, "chondrodystrophia fetalis," who so notably remained behind in her growth that she hardly attained the size of a 2½-year-old child, with a length of body of 83 cm., did not reveal in the skiagram picture any irregular formation of the diaphyseal ends, which is obviously caused by the adhesion of the periosteum between the epiphyseal cartilage and the diaphysis, but only an abnormal growth of cartilage and a total absence of ossification as against the condition present in children who had passed through a genuine rachitis. By a linear osteotomy on both legs an existing genu-varum duplex was removed, and an elongation of 2½ cm. obtained.

Joachimsthal finally also demonstrated pictures of a 12-year-old girl, suffering from a disturbance of growth, due to cretinism. Size of the body (110 cm.) as well as the ossifications corresponded to those of a 7-year-old child.

DEMONSTRATION OF A CASE OF GENUINE SYMMETRICAL DWARFISM IN CHILDHOOD.

S. WEISS (*Wiener Klinische Wochenschrift, 1898, xi., 1212*) presented the following case to the Wiener Medic. Club. The boy was admitted to the Karolinen-Kinderspital September 13th. No other member of the family was dwarfed, nor were the parents related. At birth the child was quite small. His first attempt to sit up was made when two years of age; at four years the first tooth made its appearance; at five years the child commenced to talk. Pertussis, morbilli, and varicella were gone through with. There was no disturbance of the organs of sense or of intelligence.

Findings on admission—seven years old: Length of body 76 cm.; circumference of head, 47 cm.; circumference of neck. 24 cm.; chest measure, 47 cm.; circumference of abdomen, 61 cm. The bony system was unusually graceful, symmetrical. Skull large, symmetrical; slight protuberance of the frontal and parietal eminences; indication of an occipital protuberance; the bones of the face are in proportion to those of the occiput; root of nose somewhat depressed, flattened; the milk teeth are in perfect condition. The thorax somewhat flattened, no rosary; the former aperture of thorax somewhat widened. The pelvis well proportioned. Extremities neat, small about the epiphyses, slight genua valga. The Roentgen picture of the hand shows the absence of the bone nucleus in the os lunatum, multangulum majus, minus, scaphoideum and in the distal end of the ulna; there are only three bone nuclei present, therefore, in place of seven, which already exist at the age of seven years in the root of the hand. The same retardation of development is presented in the foot, where there is absence of the bone nucleus in the os naviculare, and of ossification of the terminal phalanges. The integument and mucous membranes do not present any signs of myxedema. The thyroid gland can be indistinctly palpated. Organs of sense are normal. Intelligence and speech are those of a 3-year-old child. The lower extremities are slightly emaciated. Gait unsteady, resembling the first attempt at walking of a child. Other organs in a normal condition. The diagnosis "genuine symmetrical dwarfism," is based on the small size, the well-proportioned condition of the body, the upper body being longer than the legs, corresponding to the proportions of the new-born, length of body equal to the measurement of the extended arms, tips of fingers reaching to the lower third of thigh, absence of nuclei of ossification, absence of any symptoms of cretinism, and of idiocy. Fetal rachitis, with its short, stump-like, curved extremities could be excluded; the symptoms of rachitis present were too few, besides growth in length followed the administration of thyreoidin, which does not influence rachitis. The symptoms of a suspected infantile cerebral paralysis are too rudimentary for the explanation of a dwarfism otherwise following infectious diseases, hydrocephalus, and lightning stroke.

The administration of thyroidin, in all thirty-two tablets (commencing with one-fourth of a tablet), produced a growth in length of 9 cm. within two and a half months, increase in the circumference of the chest of 5 cm., of bodily weight 2 kg., improvement of the intelligence, a plainer speech, and more self-reliance in the gait, a change in the previously morose disposition. No unpleasant side effects were noticed.

ON OSTEOGENESIS IMPERFECTA.

Hildebrand (*Munchener Medicinische Wochenschrift, 1899, xlvi., 30*) reported a case of this rare disease of the bones in the new-born, in the Biolog. Abtheilung des Aerztl. Vereins, Hamburg, which he observed in the Eppendorfer Krankenhaus. Macroscopically the case was interesting from the marked softness of the bones, and numerous fractures of the ribs and extremities. These fractures were in the most diverse stages, and presented manifold transitions of perfectly fresh fractures, to such which had healed with the formation of bony callus (the child only lived a few hours). The extremities were short and plump, curved and bent in different degrees, the bony substance was so soft that it could be cut; compact bone could hardly be found. Microscopical examination showed an unusual persistence of the remnants of cartilage basic substance, a very partial and incomplete formation of bony substance and a slight deposit of lime in the primary zone of calcification; larger and smaller necrotic spots were besides distributed over the whole bone.

The few cases of osteogenesis imperfecta—most of the children affected by it died during or immediately after birth—were ascribed to fetal rachitis. At present the following bone diseases of the new-born are recognized:

1.—Genuine rachitis (rare).
2.—Chondrodystrophia fetalis.
  (*a*) Malacia form.
  (*b*) Hypertrophic form.
  (*c*) Hypotrophic form.
3.—Syphilitic diseases.
4.—Osteogenesis imperfecta.

The latter is a disease sui generis and can be sharply distinguished from the others macro- and microscopically. For studying bone diseases, especially for the sharp differentiation of the cartilaginous and bony tissue, Hildebrand recommends a double staining with polychrome methylenblue, hematoxylin, and van Gieson's acid mixture.

A CASE OF NOMA.

A. Klautsch (*Archiv. für Kinderheilkunde, 1899, xxvi., 245*) says that the relative rarity of noma, that peculiar gangrenous process on the cheek of young children, usually ending in death, which is located unilateral, running a rapid course, justifies the publication of the following case, which has been carefully studied:

The patient, Otto L., nearly two years of age, was admitted to the St. Elizabeth House, in Halle a.S., on June 9, 1897, in a highly anemic condition, suffering with eczema capitis, bilateral blepharitis, and lymphatic enlargements, weight 7,600 g. The child was first vaccinated on September 13th, without any result, and again on May 10th, when the vaccination was successful. During this time and the beginning of noma, the patient frequently suffered with a muco-sanguinolent diarrhea, alternating with normal passages, so that in spite of the best of care his bodily condition was not as satisfactory as could be wished. He remained weakly, thin, devoid of strength, taking little interest in his surroundings and exhibited a cross and lachrymose disposition. Towards the end of August it was noticed that the child frequently bled slightly from the gums; no stomatitis was, however, present.

A moderate swelling of the right cheek was first noticed October 10th, between the angle of the mouth and jaw, of the size of three-mark piece, which was brawny and hard to the touch, somewhat painful to pressure, the integument covering it being slightly reddened. The mouth could only be opened slightly on account of the swelling. At the same time increased salivation made its appearance, the saliva flowing continuously in large quantities from the mouth. The neighboring lymphatic glands on the right side of the neck were also somewhat enlarged.

A loss of substance in the mucous membrane of the cheek was noticed on October 14th, corresponding to the point where, externally, the brawny infiltration could be felt, it was situated near the angle of the mouth, of the size of a five-penny piece, its borders were somewhat everted, prominent, and of a yellowish-gray color.

On the following day a small hole had formed externally on the right cheek on a line with the oval aperture, about 2 cm. distant from the angle of the mouth, from which a serous fluid mixed with masses of detritus flowed. This hole continued to enlarge during this and the following days; the skin, subcutaneous areola tissue, muscles, fascia, and mucous membrane melting, so to speak, becoming necrotic and disappearing.

On October 16th the opening in the cheek had reached about the size of a dollar, and through it the oral cavity could be directly inspected. This opening was separated from the surrounding tissues by a raised, sharp border, resembling a dam, and was covered with smeary, totally necrosed portions of tissue. The oral boundaries were, as yet, intact. The room was filled with a penetrating stench from the necrosed tissue.

On October 17th the portion of skin which still separated the angle of the mouth from the necrosed tissue was thrown off.

On October 19th the right half of both the upper and lower lip had disappeared, the gangrene at the same time extending to the right ear.

On October 20th the infiltration of the cheek had progressed so that the right eye was closed and could not be opened.

On October 21st the process seemed to have come to a standstill; only a few necrotic masses could be removed by the sharp spoon from the borders of the defection. Granulation tissue could not as yet be observed, however.

On October 22d the patient was again able to open the right eye somewhat.

On October 23d an extension of the process to the mucous membrane of the right lower jaw could be observed, the second incisor, the eye-tooth, and first molar were loosened.

On October 24th, after the process had existed for two weeks, the child died suddenly within half an hour, with slight cerebral symptoms, after having passed a very restless night.

The general condition of the patient could be called pretty fair during the duration of the disease, and by no means corresponded to the gravity of the local process. The child often lay or sat in its crib, playing with its fingers along the border of the gangrenous process, quietly picking off loosened necrotic tissue. The stools were normal and occurred regularly. Sleep was, as a rule, good during the night. There was no fever present during the whole disease, occasionally a slight rise of temperature was noted. The pulse, however, was rapid from the beginning. Feeding was very troublesome,though, as the mouth could not be well opened and the muscles of mastication and deglutition could only be used with great difficulty on account of the swelling and infiltration of the soft parts, and towards the last the food would frequently flow out again at the opening.

Treatment consisted in removing the necrotic masses with the scissors and sharp spoon, followed by cauterization with nitrate of silver, partly with the solid stick, partly with the solution, and in local applications to the cheek, and rinsing the mouth with a solution of permanganate of potash. A general tonic treatment was, of course, also instituted.

This disease picture represents in a typical manner the characteristic factors of noma; the beginning of the process on the mucous membrane, in a debilitated childish organism at an early age, whose mucous membrane was already affected, as was proven by the previous bleeding of the gums, the wooden hardness of the infiltration of the soft parts of the cheek, the rapid destruction of the infiltrated parts from within outward in their whole thickness, the sharp demarkation of the affected area against its surroundings, the progressive extension of the necrotic process even involving the bone of the lower jaw, without, however, passing beyond the median line of the face; together with this the increased salivation and the penetrating fetor exore.

The etiology of this case is,in so far, surprising,as the noma appeared altogether spontaneously, in spite of the greatest cleanliness and unfavorable hygienic conditions to which this disease was formerly attributed (maladies des pauvres) could be perfectly excluded while the patient was in the institution.

Theories as to the primary exciting cause are numerous. As the theory of the occurrence of the gangrene analogous to other well-known gangrenous forms, from injuries which occur in the organism itself,partial or total obstruction to the blood-current, thrombosis of the veins of the cheek, changes in the blood or lymph, or analogous to necrosis of the cornea following section of the trigeminus, through the disturbance of nutrition from a neuro-paralytic or tropho-neurotic origin, seemed insufficient, the question arose whether noma might not be caused by external injuries, by micro-organisms. In the experiments looking in this direction it was to be expected that this gangrenous focus would present any number of micro-organisms, and it would therefore be very difficult to pronounce *one* micro-organism as the specific cause.

According to experiments so far undertaken we must still assume that noma is not due to a simple specific germ, but that numerous bacteria of putrefaction, which are innocuous to a healthy mucous membrane, may cause a process of necrosis, if they are deposited on a changed mucous membrane whose nutrition is disturbed and which is favorably disposed to a necrobiosis, which will travel irresistably through the soft parts, also attacking the bone.

As regards the question of contagion or infection and the endemic appearance of the disease in institutions, which goes hand in hand with that whether noma is due to micro-organisms, there is also a division of opinion. A certain number of observers maintain that an immediate communication by contact or by the air does not take place, that it is not therefore contagious, while others again hold that noma, if present for a long time in a hospital, develop a dreadful miasma, which can only be eradicated when no disease is present in the hospital which is susceptible to it; that gangrene of children is therefore as infectious as scarlet-fever, measles, variola, and typhus fever. As noma has not, however, been observed in a large epidemic distribution, and, so far, a miasmatic or contagious origin, and distribution has not been demonstrated with positiveness, we need not fear an epidemic of noma, especially as the disease is never met with in a perfectly healthy child, but only in poorly nourished, debilitated children or in individuals who, as a sequal of a severe disease, have suffered a permanent injury to their constitution, thus, in a sense, presenting a good soil for the disease.

THE TREATMENT OF UMBILICAL HERNIA.

Kronig (*Centralbl. für Gynekologie*, 1898, xxii, 139) discussed the various methods of treating umbilical hernia before the Gesellschaft fur Geburtshülfe zu Leipzic (17, x., 98).

The oldest method, which is still frequently employed at present, being the most simple one, consists in the application of a compress and bandage. As long as the anatomical coverings of the hernia funiculi umbilicalis were unknown to us spontaneous healing was not thought possible. It was believed that the hernia was only inclosed in one membrane, the amnion, which became necrosed (being a membrane devoid of blood-vessels), causing the prolapse of the intestines. Only after we had gained a better anatomical knowledge of the coverings of the hernia were we able to explain a sort of natural cure. When a hernia of the umbilical cord is carefully prepared we will find that it consists not only of one but of two different membranes, which enclose a more or less heavy layer of gelatinous connective tissue (Wharton's jelly) into which the three vessels of the navel end; the external coat is the amniotic sheath of the umbilical cord; the inner is composed of peritoneum and goes directly to the peritoneum parietale. The existence of this peritoneal covering, rich in vessels, makes a natural cure possible. Lindfors has gathered thirty-one cases of spontaneous cure since 1882, which were obtained by simple bandaging; this is, it is true, an exceedingly small number to prove the possibility of a spontaneous cure (1 to about 5,000 births), but it is quite sufficient to prove that it does occur. The time of healing covered four to twelve weeks (average seven to eight weeks). The manner of cure was as follows: The amnion became gangrenous and was gradually raised from the granulating, inner covering of the hernial sac, the peritoneum. Portions of epithelium now sprouted from the adjacent abdominal integument, which, covering the granulating surface, formed a cicatrix over the peritoneum, causing a certain diminution of the hernia by shrinkage. The result therefore is not a radical cure of the hernia but only a cicatrization of the hernial sac. In the greater number of cases the healing process will, moreover, not be so favorable, but will be disturbed by various injuries to the hernial sac—traumatism, infection, etc.,—so that, as a rule, a peritonitis follows in the wake of an umbilical hernia.

Olshausen did not meet with a single favorable case in fourteen cases treated expectantly; all the children died. A more active treatment was then instituted. Lindfors was the first to do a radical operation (1882); narcosis, disinfection, reposition, then opening of the hernial sac and resection, tying the umbilical vessels suturing the edges of the wound by several silk sutures, which were passed through the whole thickness of the abdominal wall.

Maryatschick gathered thirty-two cases operated in this manner, with seven deaths (= 21.87 per cent.). This mortality gave rise to other not quite so radical measures. At first, simple ligation of the hernial opening after replacing the contents of the hernia—as in tying the umbilical cord—was attempted, a procedure which could, however, only rarely be carried out (except in small hernias, or, at least, narrow hernial openings); only six cases have been published. When the hernial opening is somewhat larger, Breus' operation is indicated, in which, after replacement of the hernial sac, Koeberle's pince hemostatique is applied to the neck of the hernial sac, including the prominent ring of integument, the hernial sac ablated above it by means of the scissors and a number of subcutaneous silk sutures passed below the clamp and firmly tied, after which the stump is removed by scissors, the incised wound cauterized with Paquelin's cautery, the clamp removed, and an antiseptic bandage applied. The great danger of this operation lies in the fact that, in spite of the transparency of the coverings, we can never be absolutely sure that no intestines are included in the clamp (such accidents soon happened).

Olshausen tried to minimize the danger of the operation to the child by avoiding the peritoneum. In the case published by him he made an incision around the hernial sac which measured 4.5 cm. in diameter through the skin, ½ cm. distant from the border of the hernia. The incision only involved the skin. The incised border of skin was then loosened from the peritoneum together with the amnion and a large portion of Wharton's jelly. After the vessels of the umbilical cord had been tied with catgut, the freshened edges of skin were united over the peritoneum by silk sutures. The skin did not heal altogether by primary intention; the child, however, survived. This operation necessitates two conditions.

1.—The operator must be able to feel the amnion from the peritoneum (which can only be done if the operation is undertaken immediately after birth).

2.—The hernia must be reducible.

The great advantage of the operation lies in the avoidance of opening the peritoneum; its disadvantage in the fact that the incision is only made through the skin of the abdomen, and the edges of the skin only are united, therefore the hernia is not radically cured, but only covered with integument. Kronig attempted to modify this operation in one case by making the circular incision, not only through the skin but also through the abdominal fascia, so as to cover the replaced peritoneum also with this, thus making a radical operation of the measure.

Case.—A female child, born in the tenth month of gestation. Weight 2,450 gr.; length 51 cm. The child is perfectly normal, excepting that it presents a hernia of the umbilical cord of the size of a mandarine. The base of the tumor is 4 cm. in diameter. The hernial sac is composed of perfectly transparent hernial coverings. The substance of the hernia consists principally in a lobe of the liver, which is adherent to the hernial sac, the rest is made up of intestinal coils. The umbilical cord is inserted nearly at the apex of the coverings of the sac, somewhat towards the left. The umbilical vessels end in the coverings of the sac, the arteries of the umbilicus diverging somewhat downward, the veins to the right, upward. The amniotic covering is partially wrinkled and dried up on the summit of the hernial sac. The operation was performed under deep ether narcosis twelve hours after birth. Disinfection was procured by corrosive sublimate. The contents of the hernia could only be partially reduced. An incision was made in the skin around the tumor about ¼ cm. distant from the puncture of the abdominal integument with the hernial sac. In attempting to loosen the amnion from the peritoneum, the latter was greatly torn, so that the radical operation proposed by Lindfors had to be carried out. The skin incision around the hernial sac was carried down deeper and made to pass through fascia and peritoneum. The liver is found to be adherent by a broad base to the greater portion of the central hernial sac, and the latter is only free at its periphery; the hernial sac is now incised in a circular manner at the periphery of adhesion; the coverings of the hernial sac as well as the short stump of the umbilical cord being left behind on the liver in the area of adhesion and dropped into the abdominal cavity. The umbilical vessels were carefully tied with catgut. The gaping edges of the wound were united by silk sutures passed through the whole thickness of the abdominal wall; it was impossible to sew the fascia by itself. It was not possible to avoid extrusion of a large portion of intestine during the operation.

The further course was a favorable one. The bottle was given to the child five hours after the operation; it drank, but vomited out the greater portion of the milk. Vomiting continued about twenty-four hours. After the third day the child takes the breast. The first stool occurred twelve hours after the operation and was then regularly passed daily.

The sutures were removed on the tenth day. Fifteen days have now passed since the operation. The wound united by primary intention; the dropping of the whole hernial sac, with the amnion and the remnants of the cord did not produce any disturbance in the course of the wound. The child has gained 400 g. in weight. In spite of the favorable outcome of this case, Kronig would still prefer the extra-peritoneal method of Olshausen, with the modification, however, that not only the skin but also the fascia should be freshened, and that skin is to be united to skin and fascia to fascia. If the child is operated on soon after birth the amnion should be loosened from the peritoneum and resected. If, as in the present case, the amnion is already firmly united to the peritoneum, the whole hernial sac, together with the close cut remnant of the umbilical cord, may be dropped. The following condensed statement may be given on the treatment of umbilical hernia:

1.—Conservative treatment should be confined to cases with very large hernial openings and to cases which do not come under treatment soon after birth with still aseptic hernial coverings.

2.—Simple ligation of the neck of the hernial sac is only possible in very small reducible hernias.

3.—Breus' method cannot be recommended on account of the danger of wounding the surrounding tissues.

4.—Olshausen's method, with the modification spoken of above, should be given preference to extra-peritoneal methods. Should the amnion be firmly adherent to the peritoneum, the hernial coverings may be altogether left behind.

5.—The intra-peritoneal method of Lindfors should be confined to irreducible or hernias reduced with difficulty.

DISCUSSION: Zweifel would follow the same rules here as he would in the umbilical hernias of adults. The operation becomes more simple if bearing these rules in mind, we are not afraid to open the peritoneal cavity, which is certainly not more dangerous in children than in adults. The main factor for a firm union in the suture of the fascia, which should certainly be looked for and united singly with an interrupted suture of fine silk. We also have the advantage in the child, that the intestinal coils are not distended in suturing and are able later to adjust themselves to the tension.

Saenger, in discussing the question of the best treatment of umbilical hernia, states that we may well use for comparison the radical operation of umbilical hernia in the adult. Here the opening of the abdominal cavity and the total resection of the hernial sac, are unavoidable. The results of this operation, removing the hernial sac in its entirety, together with its covering of skin and firmly closing the freshened borders of the hernial ring, which have been split in an upward and a downward direction, with buried silk sutures, carefully suturing all layers of the wound, are brilliant. Even where no omentum need be resected, the contents of the hernial sac, although the size of a child's head, are easily returned to the abdominal cavity. For this reason Saenger believes that the intra-peritoneal operation of umbilical hernia, accompanied by a resection of the amniotic and peritoneal hernial sac, according to Lindfors, corresponding to the radical operation in adults, should be looked upon as the right one, according to principle. Kronig's interesting case has certainly demonstrated that portions of the amnion and of the umbilical cord may, without injury, be dropped into the abdominal cavity. To treat the whole amniotic sac and a large portion of the umbilical cord in this manner might nevertheless carry with it marked technical difficulties, and might be unsafe, as we are not assured of the aseptic condition of the rapidly disintegrating tissue. It will be easy to begin and carry out the operation according to Olshausen, where the amnion is readily peeled off the peritoneum. Should this be impossible, however, and should the peritoneum be torn or perforated, the removal of the hernial sac, according to Lindfors, appears safer and is more rapidly done whenever the anatomical conditions at all permit it. It will finally amount to the same thing whether the peritoneum is kept intact, is partially opened, or altogether resected; the main point to be considered here is also that the fascia and the abdominal wound are exactly united by sutures. The earlier and the more aseptic the operation is done the more favorable will be the result.

PEDIATRICS

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ORIGINAL ARTICLES

ON ENLARGED GLANDS IN CHILDREN.

A SURGICO-PATHOLOGICAL STUDY, WITH REMARKS ON THE LYMPH SYSTEM AND ITS RELATIONS TO IMMUNITY.

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AN older medical colleague once brought to a Berlin surgeon, by special request of the parents, a child, aged 7½ years, with bilateral multiple lymphoma of the neck. The surgeon was to decide whether or not the child should undergo an operation. In harmony with the ideas which prevailed at that period, the surgeon advised immediate operative interference, the glands being depots of a pernicious virus which, even in the event of their gradual involution, would be a source of permanent danger through the possibility of the generalization of the basic disease—tuberculosis. The experienced family practitioner shook his head at the zealously unfolded views of his junior, and objected in the following strain: "My dear colleage, there are other children in this patient's family, aged, respectively, 21, 17, 12, and 8 years, and each of them had the same glandular affection when they were of this patient's age, and in all of these cases the glands returned to their natural size without operation. You may see these former patients of mine, and you will be unable to detect a trace of the former dyscrasia." The operation was not performed, and now—ten years later—there is not a trace of lymphoma, scrofula, or tuberculosis to be met with in the fine-appearing young man. The surgeon who went through this experience is myself, and I believe that many of my special colleagues will be able to recall similar happenings in cases of lymphoma, which were not extirpated, but left to internal medication. I cannot, of course, speak for the United States in a matter of this kind, but it is certain that in Germany we have no fixed and uniform indications for the surgical treatment of enlarged ganglia. Where one surgeon would operate, another would pursue a course of diet and internal remedies. Again, after the glands have broken down, one surgeon performs total excision, where another would content himself with incision, with or without the subsequent use of the curette.

I shall make the attempt, founded upon a particularly attentive following up of numerous cases of lymphoma (such as are afforded by the clinic and policlinic of a great city), to define my indications for the surgical therapy of enlarged glands in children, in clear, precise fundamental conceptions, and to briefly discuss, when possible, certain problems in general pathology. Since my experience, related at the beginning of this article, I have felt an urgent need of arriving at more precise notions upon this subject than have heretofore been given out *ex cathedra* in Germany.

According to the most recent researches, particularly of the Italian School (see Virchow's Archives, vol. 156, *Manfredi*), it may be regarded as proven that the lymph-ganglia, in accordance with an old and widespread belief, are actually an apparatus not only for filtration but also for rendering innocuous the most varied kinds of virus. According to the views of Grünwald and Cornet, the ganglia along the respiratory tract constitute a protective wall against the penetration of all kinds of matter and bacilli, and especially of the tubercle bacillus. In this way the lymph-ganglia, as a whole, form an enormously important protective mechanism against the infection of the body at large by a definite peripheric current of lymph; and from this standpoint we ought to be very cautious in radically extirpating these structures. In fact I know of three cases of malignant infection of the upper extremity in surgeons who had undergone the radical extirpation of the lymph-ganglia of thearm. It was readily apparent that every injury in the territory of the lymph-radicles of the affected side led to more or less severe general symptoms, from which one of the number, Hans Schmid, of Stettin, perished; while infection of the opposite arm, which retained its lymph-ganglia intact, ran its course harmlessly and without generalization. A pathologist whom I knew had his right axillary glands removed, and after a post-mortem infection in the same extremity developed symptoms like tetanus. I myself performed total extirpation of the left cervical ganglia in a 9-year-old girl. Four months later (healing had been aseptic throughout), the child developed an attack, her first, of erysipelas of the corresponding side of the head, without any demonstrable injury. Within the ensuing two years she underwent a number of severe attacks of the same malady. Professor Riedel was the first to report several cases of elephantiasis of scrotum aud penis many years after total extirpation of the inguinal glands, whereby it was evident that hyperplasia of the connective tissue layer of the lymph radicles began when the protection of the ganglia had been withdrawn. I myself have seen three cases of elephantiasis in the territory from which the ganglia had been extirpated. Manfredi's work (*vide supra*) gives the key to all these facts: Since the network of lymph-channels arrests and filters the numerous particles suspended in the lymph, with the result that the filtrate undergoes a weakening in its virulence, so that the virus may be conceived as latent, one may, with the author, look upon this attenuation of virus as a purely mechanical problem; and, in fact, we believe that it may be shown that the doctrine of antitoxins in the sense of humoral pathology is wholly untenable* for the following reasons: I have been able to show experimentally that toxic substances, like morphine, cocaine, caffein, etc., may be subcutaneously incorporated in ever-increasing doses without the phenomena of intoxication; but that when even the smallest commencing doses are introduced within the cranial cavity of animals through a trephine-opening, a direct toxic action is observed. These experiments have been confirmed by Bouchard. The reason, therefore, that the morphine-eater requires constantly increasing doses of his drug to satisfy his cravings, is not because his cerebrum has become accustomed to the action of the morphine, but is due rather to the fact that by the hypodermic method more and more of the drug must be incorporated on account of the continual chemical irritation of the lymph-channels with resulting narrowing of caliber; so that only a limited portion of the injected drug can be absorbed and reach the brain. The balance of the drug is retained within the lymphatics,in which situation it becomes chemically indifferent through disoxidation, oxidation, transformation, subdivision, etc. There is therefore originally only a local cellular immunity at the site of entry, restricted to a single division of the lymphatic system, which is dependent upon previous injury. Herein there is a certain antagonism between the chylous and peripheral lymphatic systems. Koch was therefore able to infect rams (by the mesenteric lymphatics) which had been immunized by Pasteur himself against anthrax, by feeding them with anthrax-bacillus in cultures; because the repeated subcutaneous injections had led to irritation and obliteration of lymphatic vessels with resulting impermeability toward the virus.

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*Gottstein and Schleich. Immunität und Serum-Therapie, 2 Aufl., Berlin, 1897. C. L. Schleich, Neue Methoden der Wundheilung, Berlin, 1899.

That immunity is but a cellular, local conception, also appears from Pasteur's anti-rabic inoculations, since animals immunized to rabies are attacked by the disease when the virus is implanted beneath the dura mater. The relative acquired immunity toward scarlatina and measles may also be conceived as a closing up of the lymph radicles at the site of entry of the virus. Only in this manner can be explained the fact that children with acquired immunity to epidemic scarlatina may still contract "surgical scarlatina." The ordinary avenues of infection, whether respiratory or digestive, have been rendered impervious by obliteration of the lymphatics in those localities, but the virus may still gain the system by way of the cutaneous lymphatics—or, in other words, the entire body has not been rendered immune by the disease, but only a definite local territory. Immunity to variola also appears to me to be only locally acquired and attainable; for if the virus of small-pox be introduced directly into the blood, repeated antecedent vaccination will not prevent the development of the disease. The natural mechanism of variolous infection by way of the cutaneous system may be imitated in secondary artificial immunity; and when vaccination does not protect, which happens in rare instances, it is probable that the virus of the disease has infected the body through an unusual route—the intestine for example.

This diversion into the territorry of the theory of the functions of the lymph ganglia has for its justification the complexity and importance of these structures with regard to the animal economy. According to our conception of the subject, it is no longer justifiable to extirpate off-hand the lymph ganglia of a given locality—neck, armpit, groin, etc. The direct danger to which we expose a given locality of the body, by removing its proper ganglia, would be much more apparent were it not for the fact that "total extirpation" is in most cases only an illusion. Even the most skilful operators seldom or never succeed in removing every bit of glandular structure. Not only do some of the ganglionic bodies remain *in situ*, but those placed more centrally toward the thoracic duct are able to act vicariously. This, however, is not the invariable consequence, for compensation fails at times, and in these cases life is endangered by the extirpation of the protecting mechanism.

If now we wish to establish fixed rules to govern our practice in the surgical therapy of the glandular affections of children, we can accomplish this end only upon a basis of pathological anatomy, conjoined with clinical experience. In so far as the glandular engorgement is the expression of a pure inflammatory and cellular irritation; in so far as the hyperplasia is dependent throughout upon the absorption of bacteria or toxins, a total extirpation of the glands is an operative error, on account of the danger to which the organism would be exposed. I have in mind especially the ganglia in the submaxilliary region and in the cervical fascia. Inflammatory irritation of these ganglia involves a fusion of the glandular capsule and periglandular tissue with the great vessels of the neck, and the possibility of death by hemorrhage plays a great part in total extirpation of the cervical glands of children. Pathology shows, however,—and clinical experience is corroborative—that pure inflammatory hyperplasia without suppuration may by appropriate diet and certain medication be influenced in the direction of resolution; even when such hyperplasia has persisted for many months. A submaxillary ganglion which has become enlarged through some form of dental irritation, can persist for months as a tumor of the size of an apple—painless, movable and devoid of superjacent reddening or fever—and may finally undergo absorption through fatty degeneration. As the various forms of regressive metamorphosis which the glands may undergo fall under three heads, viz., fatty degeneration, caseation, and suppuration, our therapy must be based upon recognition of which one of these terminations is likely to occur. Strict observation of the general condition of our patient may often enable us to determine this question. If the enlarged glands tend to fatty degeneration, i.e., if the process is a purely inflammatory one, the general condition will not be in the least affected. Here there is no question of an underlying cachexia, but of an active local irritation, or immunization process, which, under certain conditions, may even be of benefit to the organism at large. The enlarged glands which follow scarlatina, measles, affections of the mouth (pulpitis, aphthæ, traumatic ulcers) are the expression of a curative process, are a symptom of the defensive forces of the individual, and to remove them, as long as they persist in the stage of a harmless cellular infiltration, would be as unnatural as to push the use of quinine in every case of fever until the temperature should become normal. If we should remove all the hyperplastic glands originating in consequence of some peripheral inflammation, we would invariably get badly healing wounds, because the noxia arrested within the adenoid tissue would readily be disseminated by the operation throughout the lymph channels in the area of the wound.

As Manfredi has shown, the rendering innocuous of the irritating substance within the microscopic labyrinth of the ganglia requires a certain interval of time, i.e., the hyperplasia persists until the oxidation or reduction of the poison is complete. From this instant the state of irritation vanishes, and the superfluous cellular deposit undergoes fatty degeneration, exactly as is the case with the functionally hyperplastic uterus after expulsion of the fetus. It is an error to believe that the muscular substance of the uterus is the only tissue which undergoes involution under these circumstances. These retrograde changes in the uterus are but a physiological paradigm for a whole series of pathological processes. Other tumors beside myoma may undergo involution: papillomata (warts), cysts, adenomata, even sarcomata, and, perhaps, carcinomata as well, may undergo benign resolution.

In purely inflammatory hyperplasia of the glands, we may see resolution follow a strengthening of the general constitution; and in many instances this resolution may be induced by medicaments. I usually employ in such cases solution of iodide of potash (1 :200) in teaspoonful dose, associated with the external application of my hydrargyrum-pepton paste.[*] Iodine, as well as mercury exerts the same specific action in thesecases, as it does in syphilis. In the *Therapeutische Monatschift*, 1890, I have shown in an experimental study that both medicaments cause emigration of leucocytes in the locality in which the circulation is compromised. Heinz, of Breslau, has confirmed this experimentally, and I have demonstrated that this emigration involves the absorption of cell-particles which have undergone fatty degeneration. Now since this fatty degeneration is the rule in syphilis, iodine and mercury can exert only an apparently specific action in this affection. These drugs are of equal advantage in all similar processes which terminate in fatty degeneration of the cellular elements; for example, iodide of potash is an excellent remedy to promote granulation, just as it is adapted to hasten the resorption of hyperplastic lymph ganglia which have undergone fatty degeneration. But even when caseation is present, and the pathological process is in relation to the presence of tubercle bacilli in the labyrinth of the gland, I find that a dose of mercury has the some marvelous effect which it exerts in syphilis. That iodide of potash may be used with benefit in scrofulous glands is generally admitted. We are therefore justified in treating purely hyperplastic glands under

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[*] This is prepared as follows.

Pepton sicci	
Amyli tritici	
Zinci Oxydati	
Gummi arabici aa	15
Subtil. pulverisate	30
Aquæ distillatæ et sterilisatæ q. s. ut fiat.	
" Pasta peptonal schleich " consistentia mellis,	
Cui addi.	
Lysoli.	
Ol. Melessæ	3

With this paste 30 gms. metallic mercury are extinguished, this being readily accomplished with a mortar, and 10 gms. of the mixture diluted with water are to be applied with a large brush, and allowed to dry thoroughly.

all circumstances with measures intended to produce absorption. This question is bound up with the subject of the recognition of the transition of a hyperplasia into caseation, or suppuration. To determine this transformation, we have to rely upon general symptoms. If we find enlarged glands in children who are pale and anemic, with thick lips studded with crusts, who further exhibit photophobia and rhinorrhea, we have before us that status lymphaticus, which consists of a hypertrophy of the entire lymphatic system, and a saturation of the tissues with plasma—a stasis of the lymphatic circulation, a chronic hyperemia of the white lymph-blood, a lymphomatous plethora. These children are, from the start, more vulnerable than others. Every illness runs a severe, threatening course. Vaccinations, injections of serum, processes which in themselves are innocent, may run a fatal course. This status lymphaticus is a disposition to disease of the most comprehensive type. If we find enlarged glands associated with this lymphatic disposition, we may feel assured that they contain cheesy foci. We are then confronted with the question of the expediency of operating on the glands. As long as the general condition is relatively good, and especially if fever, emaciation and anorexia are absent, we should not interfere. Scrofula is a dyscrasia, a disposition, and to operate on these glands is merely to combat a symptom. Besides it is these very children who are placed in peril by an operation. They are always menaced by miliary tuberculosis, the mechanical rupture of the caseous-embolic focus within the lymph-channels directly into the blood-streams. I, therefore, do not operate for caseous glands unless life is threatened.

Caseous glands may often be recognized by their contour; while the purely hyperplastic glands have the rounded, succulent appearance of a plum, the caseous glands have the angular outline of a bean, or plum-stone. They are also movable under the skin, less adherent to their environment, and feel like foreign bodies embedded beneath the skin, flattened pieces of metal or glass in a fibrous capsule. This peculiarity of contour often greatly facilitates the removal of the glands, and therefore, in view of the danger of dissemination, I prefer a sort of methodical enucleation to total extirpation. When the child has become cachectic, and an operation is earnestly requested, my custom is to split the capsule, and enucleate the contents with a large curette. If there are present rosary-like chains of caseous glands, removal of the caseous portions and retention capsules, causes the field of operation to present a number of hemispherical hollows, like so many egg-cups.

This enucleation of the substance of the glands has the advantage of the much smaller risk of general infection; and, in opposition to total extirpation it preserves the power of regeneration and future function of the glands, an advantage similarly possessed by enucleation of the thyroid, as compared with total extirpation. We surgeons must accustom ourselves to preserving the tissues of the lymph-ganglia as something of importance in the general economy. The profuse hemorrhage which may accompany methodical enucleation of the ganglia by my method, may invariably be controlled by a tamponade. I have very frequently observed that when a caseous focus has been removed from a gland, the remaining hyperplastic tissue readily undergoes resolution. Therefore I reject the operation of total extirpation for the caseous glands of *children;* especially because of the great regenerating power of the growing organism. In the case of adults it might be otherwise, but we will not stop to discuss this subject.

We still have to discuss the questions of suppuration and tumor-like formation. I distinguish between the two forms of suppuration, viz.: a diffuse, confluent type, and a miliary, disseminate form with small, multiple foci. Both must be treated by operation. In the first form, I employ incision, followed be a careful tamponade and frequent dressing (glutol powder and sterile gauze); this management is fully sufficient for a complete cure. In the multiple, disseminate, chronic form, I prefer total excision, but I do not attempt an absolute, total resection of all the adherent capsule—this radical procedure has often led to a fatal result through hemorrhage, or infection. If there are no large blood-vessels in immediate proximity, it is well to remove as much of the capsule as possible; but any attempt to extirpate all the capsule, I regard as foolhardy in itself, and of no value in determining a favorable result. It very materially prolongs the time of the operation, besides increasing the risk. In traumatic bubo, such as the gonorrheal adenitis of adults, I also employ a simple incision. It is necessary to tampon carefully, long and often, for if the focus is not removed, the process may start up afresh.

I sum up my views on the management of enlarged glands in children, as follows: First, there are far too many cases of total extirpation, when methodical enucleation, or simple incision, would have fully sufficed for a cure. Extirpation of lymph ganglia in children, with the lymphatic dyscrasia is an error, for it is the constitution which is diseased, and not the local area. Cheesy hyperplasia should be treated by enucleation, provided that a fat diet, iodide of potash, and mercurials fail to produce resolution. A syphilitic taint underlies cheesy glands oftener than is generally believed, which makes the advisability of specific medication the more urgent in these cases. In simple abscess, we should incise and tampon*, while in multiple suppuration we should carefully extirpate the foci, without any attempt to excise adherent capsule. When the glands are the seat of tumor-like enlargements, the most radical treatment is the most rational procedure.

I am well aware that the above views will not receive thorough approval. The surgeon is technically inclined to make a thorough piece of work when he operates, even if now and then some risk is encountered. The main thing in medicine, however, is to cure, and every procedure that cures is a correct one. It appears to me that a decennium of foolhardiness ought to be succeeded by a less venturesome period. Many affections have been treated in the most extensive and radical fashion, as if we were at the very flood tide of operative interference, while more extended experience shows us that we can often accomplish as much with less labor and risk. This is especially true of gynecological surgery, and of the resection of joints, and of operative treatment of tuberculosis, and finally, in my opinion, of the surgical management of enlarged glands in children.

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* For healing abscess cavities and granulating surfaces left after operations on the glands, I have found a 10 per cent. borated vaselin, applied daily after the eighth day, to give the best results.

ABSENCE OF THE FIBULA.

By Henry Ling Taylor, M.D.,
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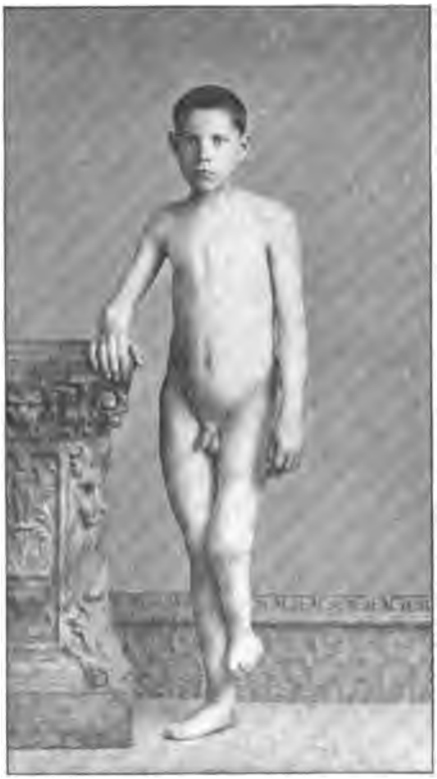
A RARE cause of congenital club foot is the congenital absence of the fibula or tibia. In the former case the foot is turned outward, in the latter inward, and these deformities are usually combined with pes equinus.

Congenital absence of the fibula is regularly associated with certain developmental anomalies, though these may not all be present in a given case.



The tibia is considerably shortened, thickened, and bowed forward, and the difference in length between the two sides increases as the child grows older. One or more toes on the fibular side of the foot with their metatarsal bones may be absent. The tarsus is usually imperfectly developed and deformed. The femur is usually more or less shortened.

The cut illustrates this condition in a boy of twelve, who has been for several years under observation at the Hospital for the Ruptured and Crippled. The total shortening of the left leg is about 5 inches, of which 1½ are above and 3½ below the knee. The boy has good use of the hip and knee, but the foot is stiff and everted, and the fourth and fifth toes with their metatarsal bones are entirely wanting.

There is not much to be done for these cases surgically, except to correct the position of the foot and the bowing of the tibia, so far as may be possible. This is sometimes best done by an osteotomy of the tibia above the ankle. These patients usually walk very well with a high patten, though they frequently require to have the ankle or leg supported by an apparatus.

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A CASE OF HEMIPLEGIA IN A CHILD.

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I WISH to report a case of hemiplegia of cerebral origin, occurring in a child, aged three years. The child was brought to me for my opinion as to the prognosis of the case. The history in brief is as follows: The child was born at full term, easy labor, without forceps and traumatism. Nothing unusual was noticed during early infancy—the child was robust and healthy from birth. During September last the child was taken with a chill one evening about bedtime; high fever followed, which lasted several days. On the morning following the chill he was taken to town to the family physician, and on arrival there, it was noticed that he could not stand, and was not able to talk. Hemiplegia was pronounced, involving the left leg, arm and the face. Previous to this occurrence the child could talk, but the power of speech was lost entirely, and not until January was any improvement apparent. Then the little one commenced to speak, but seemingly just as if he was relearning the command of language. A gradual improvement of the other symptoms was also noticed. This, by the way, is the order in which power is regained in these cases: First, the facial recovery, then the leg, and last the arm. A rigidity of the affected extremities developed with the progress of the case, also contractions of the flexors, and the reflexes became exaggerated, and slight clonus was noticed. Athetoid movements are present, but only in mild degree. There have been no mental changes apparent thus far, and aside from disturbances of rest during the first month, the patient had none of the usual symptoms of cerebral irritation.

The child is bright, of usual mental capabilities for his age, and his conduct is good. No convulsions have followed, and development of the limbs has not been greatly interfered with. The arm has wasted some, but the leg is of the same diameter as its fellow.

Some vasomoter disturbance exists in the arm. The special senses are unaffected, except hearing on the left side, which is not up to normal. It may be stated here, and it is a factor, too, which may be of etiological importance, that in February his ear discharged an offensive material, which continued for several weeks.

The symptoms of the acute stage probably reached their climax in a few weeks, and with the subsidence of the fever, amelioration began to be noticed. A gradual improvement, as before stated, has gone on, and now the chronic stage has been entered upon.

The question of etiology is one which can only be surmised; it evidently was of infectious origin, producing either local meningeal disease, or possibly inflammation of the cortex, as in poliomyelitis. As to the prognosis, a perfect cure is not to be expected; improvement will follow, as it has already been pronounced. With no marked intellectual change, and as yet no convulsions, it is possible for the child to go on and reach maturity, without further trouble, except that he will always be a cripple. We measure prognosis largely by the two most serious complications—convulsions (so-called Jacksonian epilepsy) and mental enfeeblement. In my experience as resident physician to the Pennsylvania Institution for Feeble Minded, where I was fortunate in coming under the instruction of Prof. Osler, who was then preparing for publication his work on the cerebral palsies of childhood, I learned that the mental defects were more serious and more distressing than mere palsies. Epilepsy is the potent factor in mental deterioration, and it is not infrequent in the hemiplegic.

The cases of spastic paraplegia are less apt to have epilepsy, and offer more encouragement in mental training. Mental deficiency cannot be estimated in one so young as my patient, as we cannot measure the injury done to the brain. Damage in such cases is usually irreparable, but training may improve their capabilities.

EDITORIAL COMMENTS

Schleich's Theory of Immunity

For many years it was generally believed and taught that the doctrines involved in the ancient conception of humoral pathology received their death-blow as the result of the work of Virchow, whose researches all tended to demonstrate that the seat of disease lay in the solid tissues of the body, and not in the fluids. Many of the more recent discoveries in patholcgy—phagocytosis, for example—are not inimical to Virchow's teachings. When, however, the subject of antitoxin is reached, there is implied a rehabilitation of the old humoral views which prevailed in medicine for two thousand years. It appeared then that the blood could be infected by some form of bacterium or ferment, and that this infection could be checked or neutralized by the introduction into the blood of anti-toxins, so-called; these anti-toxins were reactionary products of blood which had been surcharged with toxic substances. While these momentous phenomena were being enacted within the blood, the tissues were non-participating. In a word the entire subject of antitoxin appeared to comprise a complete refutation of the carefully elaborated life-teaching of Virchow in pathology. Dr. Schleich, of Berlin, an investigator who has already made his mark in contemporaneous surgery, who is at once original and conservative, practical and speculative, explicit and suggestive, was for years a student of Virchow, and we may imagine that he has enough bias in the master's favor to wish to see the old solidistic doctrines again in the ascendant. At any rate, he has advanced (see PEDIATRICS, Ocotber 1st, 1899) a very ingenious theory, which is doubtless true in part, that immunity is essentially local, and dependent upon the lymphatic apparatus. In support of his views, he adduces a vast number of clinical facts. In general his belief is as follows: A poison is inoculated or absorbed in some portion of the body, and first passes into the local lymphatic system, where it occasions more or less irritation, proliferation and thickening of the lymphatic structures, with resulting diminution of the capacity for absorption; this greatly lessened facility of absorption constitutes immunity of a certain kind and degree. To cite examples: The poison of measles is inhaled or swallowed, and the lymphatics which drain the respiratory or digestive organs are infected, and, as a consequence are largely obliterated, so that for years at least, it would hardly be possible to contract the disease anew by the route of the original attack. Notwithstanding this relative immunity, no protection at all would be offered, if the virus were injected directly into the blood. A man may have any number of vaccination scars, yet variola may be communicated by intra-vascular injection. When a well vaccinated individual takes small-pox, as he does at times, it is almost certain that the virus has entered by some unique route. While Schleich's theory may repel at first, it is difficult to explain a great number of clinical facts in any other manner, and we may assume that there *is* a lymphatic immunity such as he describes, but we need not follow him when he declares that there is no other plan of immunity possible.

Function of the Peripheral Lymphatics

The average surgeon has little respect for the lymph-ganglia and extirpates them for apparent cause without any reservation whatever. Schleich, however, seems to be the originator of a sort of humane movement to spare these structures under all circumstances, except when they are the seat of malignant tumors. By keen and patient observation, extending over years, he has been able to show that extirpation of the axillary, cervical, or inguinal glands paves the way for erysipelatous infection, elephantiasis, tetanus, pyemia, etc., or, in other words, this sacrifice of glands vastly diminishes the resisting powers of the body. In this way is explained the frequently noted fact that after extirpating cervical scrofulous glands the patient succumbs to general tubercular infection; since these important defensive structures can no longer oppose the penetration of the virus of the disease into the circulation. Therefore, in simple hyperplasia of the glands, even when it persists for years, Schleich never thinks of operative interference. He fortifies the patient's health in every possible way, and administers the "mixed treatment," which is generally held to be a specific only in syphilis, but which, in Schleich's opinion, is equally efficacious in strumous glands and in all processes where a cell infiltration tends to resolution through fatty degeneration of its corpuscular elements. Even when caseation has set in, as shown by the general condition of the patient, Schleich forbears for a long time to use the knife, relying upon the plan of treatment described above. Only when it becomes apparent that operative interference will be necessary does he perform a conservative operation, which consists in splitting the enlarged glands and scraping out the cheesy foci. The sound capsule of the gland with some of the cortex is thereby preserved, the residual hyperplastic tissue undergoes resolution, and the integrity of an important structure is not compromised. When pus has formed, Schleich evacuates it. Simple incision is all that is necessary for an ordinary abscess, but when chronic suppuration is present in small multiple foci, the indications for extirpating all pyogenic surfaces must be carried out, although Schleich refuses to interfere to any great extent with the inflamed and adherent capsules of the glands. He aims throughout to preserve these structures in order not to deprive the region of the body affected of lymphatic protection.

The Future Status of the Germ Theory

While discussing the views held by Schleich, it may be well to state that he gives but a limited adherence to the germ theory. In the case of specific infection, in which a rare form of bacterium is constantly associated with a rare infectious disease, such as glanders or anthrax, the germ theory appears entirely admissable. In surgical wound-infection, however, we have an entirely different state of affairs. We have a large number of local infectious processes, perhaps not less than a dozen, exhibiting great diversity from a pathological standpoint, and including hospital gangrene, lymphangitis, fat necrosis, purulent edema, etc., etc., and to explain all these infections we are forced to invoke the agency of the staphylococcus, streptococcus and bacillus coli; germs which exist almost universally as saprophytes. We also attribute most cases of septico-pyemia to these germs. The endeavor to fix the responsibility for various diseases upon the streptococcus is surely leading to a *reductio ad absurdum*, for in addition to erysipelas, various speculators have seriously entertained the belief that scarlatina and variola are streptococcus diseases. On the other hand it has recently been claimed that rheumatism is a mild staphylococcus infection. Perhaps Schleich is wise in looking with great suspicion upon the pathogenic action of these germs under any circumstances. It is well to remember that such virulent affections as variola, scarlatina, yellow fever, and syphilis appear to have no bacterial causation. When a germ is really the cause of a disease, modern methods of cultivation, or staining, or both, readily demonstrate its existence, and when no germ can be found, it by no means logically follows that one must be present. It is generally admitted that the bacterium is pathogenic, in virtue of certain highly poisonous toxins, or ferments, which are either set free during its life or after its death. There is every reason to believe that substances equally poisonous and pathogenic may be formed without the aid of pathogenic bacteria. Schleich does not attempt to treat this important subject analytically, but is content to attack it by slow synthesis. He has notes of a surprising number of cases of wound-infection in which rancid and deteria were not at all in evidence. He reviews the old belief in catalytic, or contact chemical action, to explain these cases of infection. The rancid oil possesses a ferment potency. Only in this way can we explain the infinite variety in wound-infection. If the cause of infected wounds is a streptococcus, we would have typical symptoms, one case would resemble another, or, in a word, the streptococcus should cause a specific affection. All talk about "increased virulence," "favorable soil," etc., is, to a certain extent, begging the question. Schleich, in addition to decomposing oils, has described a group of wounds from infected saliva. Close observation teaches us that the bite of every species of animal has a distinct individuality. Dissection wounds, infected by decomposing fluids, constitute a third group. It appears to be certain that the pathogenic agency in all such cases is a ferment. Half a century or more ago pathologists wrote much of ferments as causes of disease, but at that period we had no evidence that such bodies existed in pathology. We now know that ferments play a part in disease, that they are able to liquify solid tissues, and coagulate albuminous fluids. One of the most striking forms of local surgical infection takes the form of a solidification and necrosis of the sub-cutaneous fat, and surely nothing but a ferment could produce such a condition; while it is almost certain that this ferment is not of specific, bacterial origin, but may be formed in the disintegration of organic compounds, in which, at most, only harmless sprophytes play a part. The truth is that men of the type of Rosenbach and Hueppe—two of the pioneers of bacteriology—have always had conservative leanings in regard to the pathogenic power of bacteria. It is the man without practical knowledge of micro-organisms who hastens to claim everything in pathology as the work of the latter, and it is another sciolist who takes the opposite ground of bacteriological nihilism. The attitude of Schleich is therefore one to be copied by men at once conservative and wise.

Early Diagnosis of Measles

From the number and variety of new diagnostic signs for the early recognition of measles, it would almost appear that failure to detect cases of this malady in its inception will some day amount to criminal oversight—for it is conceded that the pre-eruptive period is the very stage of the disease which is most contagious, and that nearly all cases of transmission occur at that time. The need of isolation is then most imperative before any eruption has manifested itself, and our medical school-inspectors ought to be the instrument through which the morbidity of measles will undergo a great numerical decline. A few years ago our early diagnostic resources were practically limited to the simultaneous invasion of the conjunctivæ, nose and larynx by an acute catarrhal process. Even today this syndrome is of great value, because we know that the tears, nasal mucus, saliva, expectoration, etc., teem with the contagious principle of the disease, and that any such association of symptoms would alone justify isolation. But we now have a number of "clinchers" in making a precocious diagnosis. Besides "Koplik's spots," now too well known to require any comment here (further than the statement that they will hold good as a diagnostic sign in 95 per cent of all cases), we have the erythemato-pultaceous stomatitis of Comby, which is said to be generally present two days before the eruption. In this condition we have an unnatural reddening of the buccal lining especially of the mucosa of the gums, while the inflamed membrane shows more or less white pultaceous deposit. We further have Sevestre's soft palate phenomenon, a punctiform erythema very often seen in this locality, before the cutaneous eruption appears. Bolognini's sign, while not proper to measles, is said to be very commonly associated with that disease. Thought at first to be a peritoneal friction sound, it is now known to be of intestinal origin, and due to a frothy state of the intestinal contents. It is obtained by placing the child in the supine position, and kneading its abdomen. Its rationale is, upon the whole, obscure. Finally the use of cobalt glasses, or of hollow cylindrical glasses containing a copper solution, is now coming into vogue in the early recognition of all rashes. By this artifice, based on the fact of complemental colors, the unaided vision is greatly improved, and the eruption of measles may thus be made out some hours ahead of the customary moment of recognition.

SOCIETY REPORTS

Sixty-Seventh Annual Meeting.

BRITISH MEDICAL ASSOCIATION—SECTION FOR DISEASES OF CHILDREN.

PORTSMOUTH, AUGUST, 1899.

(*Continued from September 15*).

SECOND DAY OF MEETING, AUGUST THIRD.

The subject selected for discussion was "**The Causation and Treatment of Convulsions in Children.**" The Etiology, Pathology and Treatment were discussed by J. A. Coutts and A. M. Gossage, and Dr. Hugh Jones followed with a paper on the Public Health Aspect. The authors of the first papers considered that the frequency of convulsions in infancy had been greatly exaggerated. This was partly due to non-discrimination between convulsions proper and the convulsive movements which are so common in infants shortly before death. Belief in the undue frequency of convulsions had been perpetuated by the use of unnecessary and misleading terms, such as inward convulsions, silent convulsions, secondary convulsions and the like. The causes are (1) predisposing, and (2) exciting. Of these the first are the more important. The one most commonly assigned is an undue excitability or instability of the infantile nervous system, owing to non-development of the higher controlling centres. It is possible that too much stress has been laid on this instability of the infantile nervous system. Other important predisposing causes are inherited neuritic conditions, and the presence of rickets. The existence of cranio-tabes was probably of more importance as an evidence of an advanced degree of rickets than as giving rise to convulsions by allowing pressure on the brain through the softened bone.

Convulsions dating from birth are often due to hemorrhage, and are followed by spastic paralysis. Convulsions may occur at the onset of meningitis. Uremia is a well recognized cause, but is very rare under the age of two years.

Convulsions are often said to be frequent at the onset of diseases with a high temperature, but this, in the author's opinion, has been overestimated. In a series of cases of croupous pneumonia which they had collected, convulsions were not present at the onset in 5 per cent. of the cases. In another series of 300 cases, 42 occurred in children under 11 years of age, and in only 2 of these were convulsions present at the onset. Convulsions are often due to asphyxia rather than to pyrexia.

In the exanthemata, again convulsions are more frequent during the course than at the onset, and may be due to many well recognized causes. Thus, the idea that convulsions are equivalent to the rigor of the adult is contrary to the facts.

Peripheral irritation, such as teething, is usually considered of much importance, but increasing stress is being laid on the predisposing cause present.

Severe injury, such as burns, may cause convulsions apart from any predisposing cause.

Asphyxia convulsions are common, and the convulsions seen in dying infants may be due to this cause. Collapse of lung tissue is commonly found after death.

Pathology and Treatment.—Usually there is no change after death in the brain or spinal cord. Changes found are usually secondary, excepting coarse lesions, such as tumor.

Whether the condition of the brain is one of anemia or engorgement is unknown.

As to treatment, loosen the clothing and lay the child down. Hot baths may be useful.

If unconsciousness is unduly prolonged, and especially if the fits are repeated, chloroform should be administered. The injection of chloral into the rectum may be useful. Sometimes a motion is exerted, after which consciousness returns.

Amyl nitrite is recommended by some.

Gustave Smith speaks highly of hypodermic injections of morphia.

Local conditions must be attended to; for example, by the use of emetics and purges. Bromide should be given for some days afterward.

When convulsions recur at intervals, even of one convulsion per month, the patient should be put on a course of bromide, as every fit lessens the resistance.

Bromide failing, borax may be tried. Belladonna, ergot, and other drugs, often recommended, are of less value than those mentioned.

The danger of subsequent neuritic conditions have been underated.

Dr. HUGH JONES said:

(1) That the influence of convulsions from the Public Health aspect depended on the fact that convulsions must be regarded as symptomatic only. No one ever did, or ever will, die from a convulsion only; there must be something else.

(2) In recent years there had been a fall in the number of recorded deaths from convulsions—from 24,700 in 1878 to 18,384 in 1897, in spite of the increased population.

(3) Other diseases (tumor, premature birth, phthisis, etc.), show a similar decrease. There may be really less deaths from a particular disease, owing to (*a*) improved treatment, better sanitation (*b*) or to improved diagnosis, whereby deaths from an alleged cause are transferred to another. Under this heading may be included a mere change in nomenclature. Influenza it now responsible for a heterogeneous collection of obscure cases previously classified otherwise.

(4) Ninety-eight per cent. of convulsions occur under the age of 5 years, equivalent to 10 per cent. of the deaths under that age.

(5) The etiology will have already been discussed. My own feeling is that the vast majority of cases is associated with bad feeding, and from a recorded series of 1,000 cases under 2 years of age (J. Roy, Statistical Soc.), I am inclined to believe that feeding is a cardinal factor.

The summer diarrhea of infants often terminates in convulsions, and I think that the number of deaths from debility, atrophy, and inanition depends upon the amount of the previous autumn's diarrhea rate. These cases also depend upon feeding—really what I have already said.

(6) The Public Health aspect is very definite. For statistical purposes, a symptom is not a cause of death. To enable sanitary authorities to act, if they will, it is requisite that the certificates of the causes of death should be as accurate and precise as possible. It is utterly impossible to try successfully to combat death by registering symptoms.

Dr. EDMUND CANTLEY thought that the first authors did not lay sufficient stress on the effect of diet. Rickets occurred just at the age when children got all sorts of wrong food. The most important point in the food was the amount of proteid. He had never met a case that seemed to be due to excess of fat or sugar. The proteid usually acted mechanically, but might also act by the absorption of various intermediate digestive products. Some infants could not digest over 1 per cent. of proteid.

Dr. **Green** thought that bloodletting or bleeding might be useful in some cases.

Dr. **Gossage**, in reply, admitted that indigestible masses might give rise to convulsions, but thought that such slight causes could not do so apart from a predisposition.

As to the after history, in 85 cases where he had been able to trace the patients to the ages of from 11 to 23 he found the following:

Neuroses in parents	22
" " near relatives	49
Attacks frequent	21
" few	46
Attack single	18

Forty were subject to neurosis in after life, thus:

Epilepsy (haut. mal)	11
" (petit mal)	4
Somnambulism	3
Melancholic	3
Chorea	7
Megrim	9

Of the other two, one suffered from somnambulism early; hysteria, epilepsy later; the other from somnambulism early, and from melancholia later. Of those 45 free from neurosis, 8 were said to be eccentric, and nearly all were below their brothers and sisters in intelligence.

PAPERS.

Dr. **Graham Little** read his paper on "The Night Terrors of Children." These night terrors were, he thought, most frequently associated with some disorder producing dyspnea, occurring during the early sleep of young children. The dyspnea was always slight, and not to be recognized as such, but, long continued, was transformed in the child's subconscious condition into the mental contact of terrifying images.

Dr. WRIGHT, of Natal, would have been glad to hear something of the association of somnambulism witn these causes. He had seen two or three examples of this.

Dr. E. CANTLEY (London), spoke of the association of the condition with education. Many causes began soon after the child was sent to school. The same was true of somnambulism.

Mr. MORGAN (Brighton), had seen a case of night terrors, somnambulism, and adenoids, which was greatly relieved by the removal of the adenoids.

Dr. MASTERS (Dorset), and Dr. JAMES GREEN also spoke.

Mr. TUBBY (London), then read his paper on "An Operation for the Relief of Contracted Arm after Infantile Hemiplegia." The operation he recommended for the relief of the characteristic deformity is as follows: The pronator radii teres is detached from its insertion, passed through the interosseous membrane, and brought again to its own insertion. It thus becomes a supinator. The flexor carpi ulnaris is also divided at the wrist.

The arm does not undergo the opposite deformity. Pronation is carried out by the pronator quadratus, and the deep flexors are not interfered with.

The operation should be done when the cortical irritation has subsided, and one is dealing with permanent contracture.

Dr. JACKSON CLARKE (London), said there was a good deal of difference of opinion as to the advisability of operations in these cases. His own experience confirmed Mr. Tubby's. He had operated on three or four cases. One was a girl who could not sit up or walk. Although her mental condition was impaired, she did wish to walk. Now she was able to do so with but slight assistance.

Another case, a child of 3½ years of age, was operated on this year, and can now walk about. In this case the arm contracture is well marked, and probably later Dr. Clarke will do some such operation as Mr. Tubby recommends.

THIRD DAY OF MEETING, AUGUST FOURTH.

Discussion on the Treatment of Inguinal Hernia in Infancy and Childhood (Opened by Mr. John Langton, F.R.C.S.).

The discussion on Mr. Langton's paper was taken part in by a considerable number of gentlemen.

Mr. Frederich Eve, F.R.C.S., London, said he looked at the question from a slightly different point of view from Mr. Langton, perhaps partly from his own experience having been gained in connection with children's hospitals where there was a large number of beds. He thought that in saying that operation might be justifiable in cases where, through the ignorance and carelessness of parents, the hernia could not be kept up, Mr. Langton, to a great extent, gave up his case. He did not think that failure of the truss to effect a cure could even usually be laid to the charge of the surgeon. The great tendency of parents was to apply the truss over the pubes. A medical man could not always be present to apply the truss, and it was tolerably certain that descent of the hernia would be allowed to take place pretty frequently.

As to the question of operation, he would like to ask:

(1) When should we operate? As a matter of course one should operate in all cases of strangulated and irreducible hernia, but he would also add in every case in which the testicle was undescended. The presence of a testicle in the inguinal canal is a distinct bar to closure of the canal, and is also an element of danger. Such a testicle may become twisted; it is liable to injury, and is liable also to the growth of tumors. It is also often ill developed, and this has a tendency to increase to positive atrophy.

He would also operate in cases of very large hernia, and in cases where a truss has been tried for a period and found ineffective.

(2) Is operation dangerous? He had operated in 28 cases (30 operations) under the age of 11 years. Of these cases 4 were cases of strangulated hernia; 17 were under two years of

age, and 5 under one. He had had two cases of suppuration—one very slight and due to eczema of the skin; the other a case of enormous strangulated hernia in an infant; slight suppuration occurred and the infant got quite well.

(3) Is operation effectual? Of these 28 cases, he had seen 19 during the past spring; only one of these showed recurrence and a very slight protrusion into the inguinal canal.

(4) What operation should be done? In 17 cases of these 19 the incision was confined to the abdominal wall, the external ring defined, and the aponeurosis of the external oblique slit up to where the cord enters the canal. The sac was then separated from the cord. This has to be done carefully, as the cord is often adherent. The sac was then ligatured under slight tension, so that when liberated it sprang up into the abdomen. The aponeurosis of the internal oblique was then sutured and the external ring diminished by suture. Silk was used throughout. In cases where the inguinal canal is unduly large Bassini's operation is useful, but in ordinary cases it is quite unnecessary.

Mr. R. Campbell, F.R.C.S. (Belfast), did not agree with Mr. Langton as to the small part played by phimosis. He thought phimosis was bound to cause increased intra-abdominal pressure.

He also thought the condemnation of the wool truss had been too wholesale. In many cases it was very successful. Failure was due to mal application.

He was surprised that Mr. Langton advised the wearing of a truss for so many years. He would be inclined to operate after the age of three years if a truss had been worn, and had failed to cure in two years at the outside. His experience of operation had been very successful. When operating under the age of three, he thought ligature of the neck of the sac was quite sufficient, but in older children he preferred Bassini's method, and although this involved a large number of buried sutures, he did not think this a disadvantage, if an absorbable material was used. He preferred catgut prepared with formalin. It could be boiled, and remained firm for about ten days—quite long enough.

Mr. Whitelock said he had tried the wool truss carefully and discarded it in favor of the spring truss.

Mr. WESTON, F. R. C. S., wished to say one word in favor of the wool truss, which had the great merit of being inexpensive. In many cases the use of the spring truss was quite precluded by its costliness. A great many cases certainly got well under the use of the worsted truss. If we wish to cure by means of the truss, the truss must be persistently worn.

As to the vexed question of radical cure, he had never operated without first trying a truss where it was at all possible to do so. The simpler the operation, in the case of young children, the better. Incise, return the hernia, separate the neck of the sac, ligature and close the wound. The wound should be closed without drainage and the child kept at rest for a month at least. It is unnecessary for a truss to be worn afterwards.

Mr. OWEN (President) said he never undertook treatment in a case with phimosis without first performing circumcision. As to the age limit, in the advisability of performing an operation he knew of no age limit. He believed that torsion of the neck of the sac was full of danger. In some cases twisting the sac had involved the bladder.

He thought the term radical cure was immoral. One might speak of radical treatment, but the so-called radical cure did not always cure the hernia.

As to ligature, he always used silk. Catgut was apt to be a septic material.

As to the wool truss, he thought it a very excellent method of treatment. Of course Mr. Langton saw plenty of cases of failure, because it can't cure a bad case. Mr. Langton, working in connection with the truss society, did not see the cases that were cured.

He quite agreed that the child should be kept recumbent for a month afterwards.

Mr. MACADAM ECCLES thought that during the first nine months there was such a tendency to natural closure that truss pressure was quite sufficient. It was also very important to attend to the feeding of the child. Failure was liable to occcur in badly nourished children.

After the age of five years he thought that if no contraindication was present an operation should be advised.

As to cases where properly applied truss pressure had failed, he thought that in such cases there was always some other condition present. Which would militate against the success of an operation, where truss pressure had been imperfect, and the child had passed the age of infancy, he thought a proper truss should be applied. If only improvement was obtained, still the operation at a later date had a better chance of being successful. Many cases which seemed unsuitable for operation might be so improved that a successful operation could be carried out.

Mr. LANGTON, in reply, said that in his 35 years' experience he had seen nearly a quarter of a million cases, of which 30,000 to 40,000 were in children and young people. Children came in fives and tens to the Truss Society, and he dared say he had seen over 10,000 cases in children under 10 years of age. Many of these had been treated at hospitals, and many had been circumcised. Whatever advantages this operation possessed, he did not think it had much effect in relieving the hernia.

Much had been said as to the ignorance of mothers, but he thought it surprising how careful they were if properly instructed. He thought, therefore, that cases for operation were not very numerous.

A large number of cases were seen under the age of one year, and he thought very few would care to operate under the age of nine months. What then should be done for these cases? Many were content to operate for phimosis, and did not also order a truss. Could one be surprised at failure in these cases. The truss should be ordered and applied by the surgeon, adjusted by him, and the mother carefully instructed in its use. He had seen over 3,200 cases under one year of age, and of these over 70 per cent. remained cured after wearing a truss for a few months.

An undescended testicle produces no ill effect. Such cases rarely come under the notice of the surgeon. Much is said as to the pain they cause, the occurrence of fibrosis, tumor, and so on. He was sure very few surgeons saw such cases. He had only seen three cases of malignant disease in an undescended testicle.

A hernia, when treated by a properly fitting truss, in the majority of cases never descends. His experience was that a proper truss did not interfere with a child's digestion, comfort, or activity.

As to operation, Bassini's was inadmissable, and, indeed, as he had already explained, impossible in a young child, owing to the absence of a proper inguinal canal.

He thought the president spoke rather strongly about twisting of the sac. He did it in every case. But then one should first open it, so as to make sure what one was doing.

The following papers were also communicated, but did not give rise to any discussion:

1. **The Treatment of Rickets in an Out-Patient Department,** by Mansel Simpson, M.D.

2. **A Contribution to the Study of Cardiac Overstrain in the Young,** by F. J. Poynton, M.D.

3. **A Successful Case of Splenectomy for Rupture of the Spleen, with a note on the consequent blood changes,** by Geo. Heaton, M.D., F.R.C.S.

4. **Infantile Hemiplegia,** by J. Priestly, M.D.

A discussion on **The Treatment of Inguinal Hernia in Infancy and Childhood** was opened by Mr. John Langton, F.R.C.S. Mr. Langton limited his remarks to cases occurring in children under the ages of 10 years. Femoral hernia is comparatively rare in young children, amounting to not more than 3 per cent. in all cases. No statistics were known to him, showing the proportion of ruptured infants to healthy infants, nor as to the influence of race, but he believed that Jewish children were more liable to the condition than others. Boys were well-known to be more liable than girls.

Hernia is more common on the right side, and this has been shown to be associated with the fact that the vaginal process on the right side is nearly always open at the time of birth, while on the left side it is nearly always closed. It is often difficult in young children, to say whether the hernia is in the tunica vaginalis, as the rupture seldom descends so low as to envelope the testis. The fact of the patient being born ruptured does not prove that the hernia is in the tunica vaginalis. In infancy, diagnosis is easier than in later life. Malposition of the intestine in early life does not often lead to difficulty.

Treatment may be considered as (1) preventive, (2) instrumental, (3) operative. The treatment must be also varied if umbilical hernia is also present, as it is in 21 per cent. of all cases.

(1). As to preventive treatment, proper dietary was of great importance. Improper feeding leads to chronic intestinal irritation, distension of the intestine, and consequent increased pressure on the abdominal wall, so that the girth of the coil of the umbilicus may be very considerably increased.

Circumcision is often recommended as a mode of preventive treatment, but in the speaker's opinion, phimosis did not play a very important part in the production of hernia, and this opinion was in accordance with the fact that Jewish children are particularly liable to hernia. The operation itself is attended by pain, and the dressing is accompanied by crying and straining. Phimosis and hernia are not found in practice to be necessarily associated. Micturition is not due to the sole action of the abdominal muscles, but largely to the intrinsic muscles of the bladder.

Muscular exercise, tending to strengthen the abdominal muscles, is important as a prophylactic, and can be carried out in children above three years of age.

(2). *Instrumental*, by means of a truss or the wool bandage.

If treatment is begun as soon as the condition is recognized, operative influence will seldom be required. The skein wool plan is now very largely used, both in hospital and private practice. The speaker had tried it very extensively, and believed the results were not satisfactory. In fact, failure might be safely predicted, owing to displacement of the knot, its dirtiness, and the loss of elasticity in the wool. He had therefore quite given up its use.

Trusses.—For the proper measurement and adjustment of a truss, experience counts for much, but the number of cases in which a properly fitting truss failed to retain the hernia might be counted on one's fingers. The truss must fit properly, be covered with rubber, and be worn night and day. If the patient is properly looked after, excoriation of the skin did not occur. The results in private practice are habitually better than those of hospital practice.

Time.—As to the time the truss should be worn. If begun before the age of 1 year, it should not be discarded before the age of 3; if not before the age of 3, it should be worn till the age of 7; if not applied till 7, it should be worn at least till puberty. The prospect of permanent cure is encouraging, and more so the younger the child when the treatment is begun. If an umbilical hernia is present also, the inguinal hernia should be tested first.

(3). *Operation.*—Indications for operation are not often present. The conditions also are not very suitable, the cause being hardly found, and the tissues being too soft. No operation should be advised prior to the age of 5 or 6, except in unusual cases. In such cases the speaker used a ligature of kangaroo tendon, which resists absorption for three or four months. Silk may cause suppuration even after three or four weeks.

Operation is indicated in the following cases:

(1) Irreducible omentum.
(2) Irreducible omentum, with fluid in the sac.
(3) Congenital hydrocele.
(4) Strangulated hernia.
(5) All cases of fluid in the sac of the hernia.
(6) When it is found impossible to retain the hernia mechanically.
(7) When proper treatment is impossible, on account of the incompetence of the mother.
(8) When a truss has been worn for 3 or 4 years without benefit.

To sum up:

(1) Hernia, if properly treated, is curable.
(2) If a family history of rupture is present, preventive measures should be resorted to as early as possible.
(3) There is no evidence that circumcision either prevents or cures.
(4) Operation is rarely needed.
(5) The age is ill-suited for operative interference, and, if properly treated otherwise, cure usually takes place.

CORRESPONDENCE.

1215 Columbus Avenue,
Waco, Texas, August 16, 1899.

Editor PEDIATRICS:

DEAR SIR.—The interest recently manifested in the study of malaria in childhood, as seen in your worthy journal, PEDIATRICS, induces me to report a case that occurred in my practice in Tennessee, in September, 1880.

The family lived on a small stream that frequently overflowed its banks during the Spring and Summer and formed small, supersaturated lakes around the house. The mother, Mrs. J. W., was attacked in August with the quotidian type of malaria, which continued until her accouchement, on September 9th. A fairly healthy boy, weighing eight and one-half pounds, was born at about 4 A.M. I was summoned to see it at 10 A.M. of the same day and found it in the algid stage of intermittent fever. As this was the youngest patient I had seen suffering from malaria, I anxiously watched for the recurrence of the chill. This appeared on the following day a half hour earlier than on the day previous. Under quinine inunctions, together with the internal administration of the same remedy to the mother, the child made a slow recovery.

The mother stated that before the child's birth she had noticed on several occasions that it became restless about the hour the chill occurred after birth. How much of this was imagination and how much fact I can not say, but in view of the appearance of the chill on the first and second days after birth, I see no reason to doubt her statement.

Yours truly,
W. A. HOWARD.

PRACTICAL NOTES

Prevention of Nasal Catarrh.—Dr. F. C. ROGERS believes that since the catarrhal process usually begins in childhood, the change from a healthy to a chronic catarrhal condition can generally be avoided by the use of proper clothing, the bath, attention to the digestive apparatus, exercise, and fresh air, and last, but in no wise least, by such local treatment of the nose and throat as may be necessary to insure freedom of nasal respiration and drainage. Exposure is inevitable, therefore we must prepare for it by increasing our resisting capacity by accustoming our bodies to sudden changes. Too much clothing is worse than too little. Our aim should be to cover the body with light woolen underwear and outer garments sufficient to keep the cold out, but not enough to be burdensome or to induce even slight perspiration. There is no more pernicious habit than that of wrapping the throat in furs, large collars, boas, etc., for by their use the resistance of that part of the body which is bound to be exposed at times is lessened. It should be remembered that any improper action of the digestive tract is sure to intensify any existing pharyngeal or nasal trouble. Outdoor exercise should be encouraged as a means of fortifying the body against future diseases. The temperature and ventilation of school rooms is a productive factor of disease in too many cases. The same is true, to quite an extent, of our houses. The furnace-heated air, almost devoid of moisture, overworks the glands of the throat and causes them to undergo hypertrophy. Purulent rhinitis, so common and persistent among children, should receive continuous home treatment. The value of such treatment can hardly be overestimated. A soft rubber ear syringe, with a warm alkaline and antiseptic solution, used two or three times a day, each time thoroughly cleaning the nose. Dr. Rogers believes the routine use of a cleansing spray to the nose and throat every day or two is valuable, simply as a prophylactic measure.—*Laryngoscope.*

Treatment of Chronic Eczema in Infants.—NEUBERGER·

NURNBERG has treated thirty children, varying from 2 to 5 years of age, with small doses of arsenic. The treatment consisted in giving a child 2 years of age and over Fowler's solution 1 minim, aqua distill. 1 minim. This amount was given once a day after a meal and continued for one or two weeks. The dose was increased in the third and fourth week to two or three drops. The amount given never exceeded seven drops a day. In infants and children under 2 years of age Fowler's solution 1.5, aqua distill. 3.5 was given, and the dose in these cases never exceeded five drops a day. The infants took the arsenic well. The author was satisfied with the results, but often there is no sign of improvement till fourteen days have elapsed.—*British Medical Journal.*

Lanolin as an Agent in the Reduction of Enlarged Glands.—A. C. FRICKENHAUS reports the rapid reduction in size of enlarged glands after inunction with lanolin. The axilliary glands were enlarged and painful, following recurring furunculosis of the trunk, and thorough application of lanolin over the enlarged glands was followed by diminution in their size and marked lessening of pain. Similar results were obtained in a case of angina tonsillaris, accompanied by enlargement of the tonsils and pain on swallowing.—*Monatshefte für Prakt. Dermatol.*, June 1, 1899.

Ichthyol has been recommended by Dr. KEDARNATH DAS in dermatitis exfoliativa neonatorum (Ritter's disease). The author states that the ichthyol, being a parasiticide and keratoplastic, is peculiarly indicated in this disease.—*Lancet.*

Caffeine is often a useful remedy in the treatment of hay fever. One-sixth gr. granules can be administered at frequent intervals with effect.—*Wis. Med. Rec.*

Aromatic Cod Liver Oil:—

Cod liver oil	1 pint
Eucalyptus oil	75 min.

Tablespoonful at a dose. *Med. News.*

ABSTRACTS

PEMPHIGUS NEONATORUM.

Dr. P. Muntz (*Der Kinderarzt*, 1899, x., 23) says that Hebra and Steiner have proved statistically that this disease occurs fourteen times more frequently in the new-born than in adults. It is usually met with between the third and tenth day of life; it may, however, exceptionally also develop a later period. Opinions are divided as to the etiology of the disease. Caillant, Zeissl, and their pupils, do not recognize a pemphigus due to lues, while others, as Doepp, Sachs, Lee, refer every case of pemphigus back to congenital lues. It is, however, being admitted more and more that there are two forms of pemphigus, namely, syphilitic and non-syphilitic, which differ from each other in their etiology, as well as in their disease picture. In opposition to M. Lange and Soltmann who, in their recently published work on pemphigus neonatorum, wish to exclude the cases due to lues, the author believes that all forms of pemphigus neonatorum, including the syphilitic forms should be included in this disease picture.

Although the etiological factor of one form of pemphigus, namely, lues, has been recognized, there is great confusion in assigning the cause of the other forms. The occurrence of pemphigus is coupled, on the one hand, by Bohn, Meissner, Dohrn, with some mechanical, chemical or thermic irritations which are brought to bear on the tender skin of the new-born at the time of physiological scaling of the epidermis; on the other hand, disturbances of digestion and nutrition and the poorly ventilated habitations of the poor are considered favorable to its occurrence; this latter idea loses some of its value from the fact that also well fed children of the rich, where no improper feeding or housing can be said to exist, are also attacked by pemphigus. This view of the bacterial, infectious nature of pemphigus has been well supported by numerous innoculations, and also by the endemic distribution of the disease. The transmission of pemphigus by children to adults, which has been observed a number of times, is also notable. The bullæ in these cases made their appearance first, as a rule, in those localities which had come in immediate contact with the child suffering from pemphigus, on the breasts of nursing women, on the lips of persons who had kissed the child. While the disease occasionally spreads in these cases which have been caused by contact, it is curious to note that where inoculation has been practiced with the fluid contents of the pemphigus vesicle, the vesicle remains confined to the place of inoculation.

Up to the present we have not been able, moreover, to demonstrate a specific fungus or spore in the contents of the bullæ or in the blood of the patient.

Strelitz, however, has bred from the alkaline contents of the vesicle the white and yellow pus coccus; Almquist a form of coccus not well defined, and Peter has found the above mentioned excitors of pus, as well as another diplococcus, not only in the pemphigus vesicle of children, but also in the blood of the latter, as well as in the blood of the mother, who was suffering from septic poisoning. Although Demme, Gibier, Felsenthal and Soltmann have named a microbe of pemphigus, we are unable as yet to designate any certain form of bacterium as the excitor of pemphigus. This much is, however, ascertained, that pemphigus rests on a bacterial basis. The transmission of the exciter of pemphigus, be this what it may, is undoubtedly brought about primarily by the hands of that person who comes in immediate contact with the body of the child during bathing or drying; soiled linen may also transmit the disease. Here we are dealing, in the first place and mainly, with a purely local infection. A vesicle forms on that part of the skin on which the exciter of pemphigus has been deposited; if the contents of this vesicle are distributed over the skin, we will have vesicles springing up wherever the poison has gained entrance under the epidermis. The point of entrance of the exciter of pemphigus may be the wound of the navel, where we will first have an eruption of vesicles concentrating around the navel, pemphigus periumbilicalis, or else it may be some lesion of the epidermis which is barely visible.

We are able to understand this, for the reason that, as already mentioned, Bohn, Meissner and Dohrn find a favorable cause for the appearance of pemphigus in external cutaneous irritation of a mechanical, chemical or thermic nature. In case only where the skin has been unusually irritated and maltreated, and thus slight injuries have been inflicted on the epidermis, do we find a favorable soil for the invasion of the pemphigus poison. The author concludes from these facts, which as far as he knows has yet been pointed out, that the tender, easily lacerated skin of the child may be impregnated with the pemphigus poison during its passage through the vagina, which we know to be a culture medium for various bacteria and probably also for those of pemphigus, and that in this manner an eruption of vesicles may take place soon after birth at various points of the body. Although we may admit the local origin of pemphigus neonatorum, we need not exclude, therefore, the possibility that, during the further course of the disease, noxious material, perhaps even the exciter of the disease itself, may pass into the circulation from the contents of the vesicles, and thus give rise to metastases on the skin and to a general infection.

The pathologico-anatomical picture of pemphigus neonatorum in many respects resembles the picture presented by adults in this disease. The covering of the vesicle is formed by the raised epithelial layer, the base is formed by the reddened corium; the papillary body is in an inflamed condition, and is filled with exudation cells. The contents of the vesicle is at times serous, at times more puriform, at times tinged with blood; we are unable to demonstrate it in various forms of bacteria, most generally pus cocci. The vesicles are either tense and shining or flaccid, soft, and, in this case, present a dull appearance. The size of the vesicle between that of a pea—the author, however, has also seen them of the size of a pin's head—to that of a hen's egg; a number of smaller vesicles frequently become confluent and form an extensive eruption. The skin intervening between the individual vesicles, as a rule, is of a vividly red color, this sign of the presence of an inflammation is, however, also frequently absent. A reddening of the site of an eruption does not always precede the formation of the vesicle; the latter may also spring up on a perfectly normal skin, without a previous congestion of the papillary body. A faint red ring surrounds the vesicle, after it is formed, in nearly every case, at least the smaller ones. In a very short time, either from external mechanical injury or from the pressure of the fluid inside the vesicle, the latter ruptures, and a superficial ulcer is formed by the removal of the epithelial layer; the corium lies free, and becomes covered, sooner or later, with a darkish crust, under which the ulcer rapidly heals. There is probably no part of the body where vesicles may not develop, not only the external covering of the body, but also the mucous membrane of the mouth, the pharynx, even that of the esophagus or possibly of the bronchi, and the eye may become the seat of the disease. In pemphigus of the mucous membrane the epithelium of the mucosa is lost, the papillary body greatly inflamed; the vesicles at no time, however, attain the size of those appearing on the external integument; the mucous membrane involved frequently becomes very painful, and easily bleeds.

The clinical symptomatic picture of pemphigus neonatorum varies quite often; the purely acute form presents itself already in a somewhat different manner than the luetic form. Each one of these forms may, however, have a varied beginning and course. As regards the acute, non-syphilitic pemphigus, we find that otherwise robust, well-developed children are attacked either suddenly while in perfect health, or that this is preceded by various prodromal symptoms for two to three days. Fever, general restlessness, digestive disturbances, itching of the body, etc. The further course of the disease depends on the violence of the vesicular eruption, and the general condition of the child. As long as the vesicles are confined to a small number, the child seems well, it hardly impresses one as being ill. The vesicles heal without leaving a trace, as a rule, within ten to fourteen days. Where larger portions of the body are, however, attacked by the vesicles, where especially the epithelial covering has been lost, and extensive surfaces are denuded, we will find marked disturbances of the general condition, besides great pain which causes pitiful crying at every touch, high fever, reaching 41°, or else a subnormal temperature as low as 34°, disturbances of nutrition and great restlessness. The symptoms in rare cases culminate in convulsions, trismus, general collapse, to which the child in a short time succumbs. The disease only becomes dangerous when a circumscribed gangrene of the skin and its accompanying deeper loss of substance or a general furunculosis occurs, instead of a rapid healing over of the affected portions; the vesicles, in these cases, show only a very slow tendency to healing; the children for this reason lose ground more and more, and finally die of cachectic conditions. Occasionally purulent pleuritis, infectious diseases of the navel and general sepsis have been observed as sequalæ to pemphigus neonatorum. Pemphigus neonatorum, due to syphilis, presents some peculiarities as against the non-syphilitic acute form, which are characteristic of it. It generally affects debilitated, poorly nourished children which we know to be characteristic of lues. The vesicles in syphilitic pemphigus make their appearance either immediately after birth, or the children are born with them. The course of the disease, provided the patient weathers the first storm, is more chronic, even when the vesicles are few. The disease drags on for weeks and months, occasionally interrupted by slight improvement, until the children finally die of the cachexia. Complications, as they occur in acute pemphigus, may also shorten the disease quite considerably.

The diagnosis of pemphigus is readily made. Mistakes with other diseases which present a vesicular eruption, as urticaria bullosa, varicella, bullous erysipelas, erythema exudativum, scabies, eczema, zoster, leaving aside that these only very rarely occur in the new-born, may be easily avoided if the differential points given above are not lost sight of. Secondly, the diagnosis, whether we are dealing with a syphilitic or non-syphilitic pemphigus, must be made. The time of its appearance and the further course of the vesicular eruption will, it is true, now and then determine the diagnosis; but the appearance and seat of the vesicles may also give a hint as to the form of the disease. Luetic pemphigus presents a few peculiarities in this direction which are characteristic. The vesicles are nearly, without exception, flaccid and relaxed, and hence present a dull appearance; they also do not attain the size, as in acute pemphigus, being rarely larger than a pea, at the most attaining the size of a small hazel nut, at the same time they appear isolated and distributed. No less does the seat of the eruption determine the diagnosis. Luetic pemphigus makes it appearance by preference on the palmar surface of the hand and the soles of the feet, and also on the mucous membranes, while acute pemphigus is hardly ever found in these localities. The diagnosis of syphilitic pemphigus is assured where other symptoms, aside from the initial infection, point to lues, as, for example, rhinitis chronica, condylomata in the neighborhood of the anus, enlarged glands, roseola.

The prognosis of the disease may be gathered from what has been said above. Acute pemphigus is more likely to run a favorable course than syphilitic pemphigus. Aside from those rare cases where complications cause an unfavorable issue, a cure is usually affected in acute pemphigus, on an average in twelve days. In syphilitic pemphigus the child born with the cachexia succumbs usually, in spite of good care and specific treatment, sooner or later to the onslaught of the disease.

Prophylaxis will probably never be able to prevent the disease. The numerous small, barely visible rhagades and fissures which are present in the skin of the new-born babe will always permit the entrance of the germ of pemphigus; in the same manner wounds of the navel in not a few cases furnish an entrance portal to the excitor of the disease. At all events, everything which may irritate the epidermis should be avoided; for example, hot baths and harsh rubbing in drying the child. It stands to reason that with this the most minute cleanliness of the child should be observed and this especially in regard to the towels used for drying it. After the disease has made its appearance, the time for prophylaxis enters its true domain, and should be observed carefully, so that the disease is not transmitted to other children. All persons who have dealings with a child suffering from pemphigus, as midwives and nurses, should thoroughly disinfect their hands and clothing previous to caring for another child. Where there are other children in the family, the patient should be strictly isolated. We should, however, also carefully watch that the disease focus does not spread in the sick child itself, from the discharge of the vesicles coming in contact with healthy portions of the body, and becoming a cause of new eruptions; the bodily linen should, therefore, always be carefully disinfected after having been once used.

As regards the treatment, it is difficult, out of the great number of methods advocated, to make a choice. The most rational treatment seems to be the placing of the child once to twice daily—weakly children, however, only once daily or every second day—for five to ten minutes in a luke-warm bath, say about 27° C., to which some astringent or disinfecting drug has been added. Soltmann recommends a decoction of oak bark as an astringent (500 g. cort. querc. to 4 litre of water; in place of this, about 25 gr. of tannic acid may be added to each bath.) According to Bodenstab and Lange, permanganate of potassium has proved an efficient disinfectant, which should be added in such quantities so as to render the bath of a light red color. The larger vesicles should be carefully emptied of their contents before each bath, the emptied vessels may then be touched thoroughly with a tampon of cotton saturated with a 2 per cent. solution of boric acid. After the bath, the dry treatment finds its place. All affected parts of the body should be thoroughly covered with a dusting powder, after the child has been carefully dried without friction. The author found airol-amylum (2-10) very efficacious. When this has been done the child is wrapped in sterilized gauze. In the syphilitic form of pemphigus specific treatment should go hand in hand with the treatment just described. Inunctions should not be practiced on account of the tender state of the skin; the internal administration of calomel is to be preferred; should calomel not be well borne by the usually debilitated child, corrosive sublimate may be added to the bath already mentioned; the strength of the latter should, however, be carefully regulated on account of the danger of absorption of large quantities of mercury, which very readily takes place from the large surface of skin denuded of epithelium.

ON TUBERCULOSIS OF THE UPPER JAW IN LITTLE CHILDREN SIMULATING EMPYEMA OF THE ANTRUM.

A. Avellis (*Munchener Medicinische Wochcnschrift*, 1898, xlv., No. 45.) says that Cases of empyema of the antrum in infants have been published by three authors, Power, Moure, and Greidenberg, each describing one. The main symptoms of the disease which was presented as one of very rare occurrence, were: A fistulous canal below the lower eyelid, swelling of the palate, and the upper wall of the jaw, a continued purulent discharge from the fistula, and nose, formation of a sequestrum, and the recognition of rough, denuded bone, finally exophthalmos. Avellis doubts the diagnosis, in these three cases, and positively denies that they were cases of empyema of the antrum. In a typical empyema we deal with a purulent affection of the lining membrane of the antrum. The symptoms named above are, however, just such which do not belong to a true empyema, excepting only the flow of pus from one nasal cavity, which is not sufficient justification to assume the presence of an empyema of the antrum. What is the condition, moreover, of the antrum, for example, of a child three weeks old? The antrum is only ½ mm. deep in the fourth month of life. Previous to this, its existence is only theoretical, therefore an empyema of the antrum in an infant is hardly possible, on account of the developmental history. According to Avellis, these cases were nothing less than a tuberculosis of the marrow-tissue in the nasal and palatinal process of the upper jaw; in short, caries! As the latter takes its origin from the infra-orbital process, the fistula naturally makes its appearance below the lower eyelid; the thickening of the palatinal process is caused by the caries of its marrow, the formation of a sequestrum, the denudation of the bone, the chronic suppurations, the formation of granulations, the periostal enlargement of the bone, the slow healing process, with the expulsion of pieces of dead bone—all in favor of tuberculosis of bone. Avellis also observed a case himself, which had previously been diagnosed as "empyema." An abscess developed below the left eyelid in a six week's old boy. This pointed, and small pieces of bone were expelled through the copiously discharging fistula, while the cheek began to swell At the same time a purulent and fetid discharge issued from the left nostril. In a hospital to which the patient was admitted, the jaw was scraped with an iron spoon, after a flap of the skin had been turned back according to Langenbeck's method, under the diagnosis of empyema of the antrum. Granulations, pieces of bone, and one carious tooth were removed. The wound healed by first intention, the fistula below the eyelid closed with deep retraction, and the formation later of ectropion; the nose, however, continued to discharge pus. After this condition had lasted for some time—the child was now 1¼ years of age—Avellis was consulted.

The anterior wall or the upper jaw was now only slightly swollen, the the hard palate, however, markedly bulged into the mouth, on the left side. Palpation did not reveal a soft spot. The left nostril contained much pus. A sound passed into the nose revealed the presence at its bottom, namely the dorsal portion of the palatinal process of the upper jaw, of very rough, sharp and denuded portions of bone. A microscopical examination which was held later revealed the presence of a few, but distinct, tubercle bacilli in the discharge. Avellis emphasized that an acute osteomyelitis of the upper jaw is also frequently mistaken for an empyema of the antrum.

A CASE OF SYMMETRICAL GANGRENE IN A CHILD.

Berend (*Gyermekgyogyaszat*, N. 1, 1898; *Der Kinderarzt*, 1899, x., 87) states that symmetrical gangrene, described by Reynaud (1862), is one of the rarest forms of nervous disease, and is frequently to be looked upon as a part-symptom of syringomyelia and tabes. Its occurrence is attributed to the most various causes, among others to anemia or nervousness. The nature of the disease is looked upon by Senator as a vascular spasm, with a consecutive local asphyxia; it is more frequently met with in women than in men, but rarely in children. Of the 93 cases reported by Morvan, 24 occurred in children under 10 years of age. Berend's case is that of a 6-year-old boy, who became ill when 3 years of age. The margins of both auricles took on a reddish-blue tint, becoming painful and ulcerated after two weeks. The color of the ears became normal later, but the ulceration never healed perfectly. One year later similar changes occurred in both feet, then also in both hands. The patient was always worse in winter than during the other seasons of the year. When examined at the hospital, no abnormality could be discovered in the well-developed, intelligent child, during the period of well being. The margins of the auricles present a loss of continuity of the size of a bean, at whose periphery the surface of the skin presents a bluish color. The hands and feet present smooth, whitish, glistening scars of various sizes. The day following his admission to the hospital the integument of both feet, as far as the malleoli, became dark-blue, cold to the touch, and violent pains were experienced, spontaneously as well as on handling in these localities. The discoloration extends equally high on both legs, and passes on both sides into the healthy tissue at a marked dividing line. Both the discoloration and pain are most severe in the great toes. The tendon-reflex is increased, as also the sensibility of the skin, during the attack. The attack runs its course in twenty-four hours, the skin remains of a bluish color only in certain spots, where ulcers are formed, which heal within 2½ weeks. The child had eight attacks of this kind while in the hospital; five of these involved the ears, three the feet; they did not always occur symmetrically, the well-known picture of the disease in one case appearing twenty-four hours earlier on one auricle than on the other; the duration of the attacks varied between half to twenty-four hours. They could not be induced artificially, either by cold, heat or pressure on the vascular and nerve trunks.

ON THE USEFULNESS OF METHODICAL IRRIGATION OF THE INTESTINE, AS AN ESSENTIAL FACTOR IN THE TREATMENT OF HABITUAL CONSTIPATION.

SCHELLONG (*Therapeutische Monatshefte*, 1898, xi., 621) states that in all recent treatises on intestinal affections we find it directly stated that purgatives should be avoided as much as possible in the treatment of habitual constipation, and that physical methods of cure are to be employed by preference. Schellong has attempted for the last eight years to treat all cases of habitual constipation by methodic intestinal injections, and was in most cases able, with only a few exceptions, to accomplish his object in four to six weeks.

The patient is instructed to inject exactly at the same time every morning, either on arising, or, better still, after breakfast, one-quarter litre of water of the temperature of the room, by means of an English rectal tube, while lying on the left side with knees well drawn up. The water should be allowed to flow slowly into the rectum from a slight height, and the tube should be passed as far as possible into the intestine. As soon as a desire for stool comes on the injection should be stopped for a second. After removal of the tube, the water should be retained for a short time. No purgative is to used during this whole period of treatment. The patient should not have a stool at any other time of the day, but should endeavor to retain it if a desire to defecate occurs in the interval. The following diet is also prescribed: In the morning strong coffee, with little bread and some honey, always using rye, or Graham bread; vegetables should be taken quite freely; outside of this the diet should be mixed; before retiring, six plums should be eaten. Tea should be avoided. A brisk walk should be taken daily. Children should have their fluids cut off in proportion.

Should no stool have occurred after a week, which is rare, the following modification of the irrigation process is to be employed; first, an irrigation with warm water (½ to 1 litre) should be made, to soften any hardened feces. The water is allowed to flow in slowly, with the assistance of another person, and allowed again to return by lowering the irrigator, and this is to be repeated ten to fifteen minutes, until the returning water shows a distinct admixture of fecal matter. The warm water is then, as much as possible, syphoned off, thrown away, and a glass of cold water is poured slowly into the irrigator, whose rectal tube has been removed; this produces a strong counter-irritation, which is usually followed by a copious stool. Should the stool be insufficient at first, the same procedure may be repeated on the following day.

A CONTRIBUTION TO THE TREATMENT OF PRURIGO IN CHILDHOOD.

H. Wolff (*Archiv. fur Kinderheilkunde*, 1898, xxv., 5-6) has experimented with injections of carbolic acid in recent years, using as an injection daily the contents of a Pravaz syringe full of a 1 per cent. solution. The result was very good; the injections acting specially favorable and rapidly on the itching. The treatment could not be continued long, however, on account of the dangers of intoxication.

Later, thyreoidin was tried. The results were not altogether satisfactory. The administration of this drug not infrequently caused a marked decrease in weight. Improvement of the itching corresponds to the loss of weight, and *vice versa*, the gain in weight, after the injections are discontinued, means an increase of the skin affection. We are unable also to prevent the occurrence occasionally of thyreoidismus, on account of the variable strength of the thyreoidin preparations.

During last year only twelve patients suffering from prurigo were treated at the hospital. Treatment in the first seven cases admitted consisted in subcutaneous injections of carbolic acid (1 per cent.) and pilocarpin (1 per cent.), which were alternated daily (a Pravaz syringe full always being injected). The age of the children ranged from 5 to 13 years, all having acquired the disease during the second year of life (this is also true of the patients in the second group). In a few days itching decreased, the nodules gradually disappeared, the existing eczema, due to the scratching,subsided and the skin became soft and pliable after three to four weeks.

Improvement, unfortunately, did not, however, continue long; the patient frequently returned in two weeks as bad as before. The rest of the children, five in number, were treated with Monti's bandage. First, they were given a bath, the skin of the extremities was then thickly powdered with zinc salicylate, and finally enveloped in Mosetig batiste, so closely applied that no portion was left uncovered, a firmly applied bandage finished the dressing. This was renewed every forty-eight hours, the skin being again thoroughly cleansed and the powder thickly applied (the Mosetig batiste should not be directly applied to the skin, as it would then cause eczema). At the first renewal the skin is already found moist and soft, the number of nodules diminished, and after the bandage has been renewed three to four times, nearly all symptoms have disappeared. This method, while it is more pleasant to the patient, is even more rapidly effectual than the subcutaneous injections, and the intervals in which the patient is free from the disease also seem to be prolonged. Monti recommends that a well-fitting garment made from Mosetig batiste should be worn by the patient at night after the foregoing treatment, so as to prevent a relapse.

TWO CLINICAL OBSERVATIONS OF CONGENITAL DEFECTS OF SKIN IN THE NEW-BORN.

VOLKMANN (*Berliner klinische Wochenschrift*, 1898, xxxv., 1025). This affection—so Volkmann testified before the Gesellschaft der Charité-Aerzte (16, vi., '98)—is very rare. Volkmann only met with these two cases in about 3,000 births. One case was the child of a II-para, 30 years old, fully matured and otherwise well developed. This child presented two small granulating spots of the size of a bean, having rather smooth borders, on the left parietal bone, immediately to the left of the small fontanelle. The other case was the child of an 18-year-old I-para, a fully matured male, who presented a slightly raised spot of the size of a lentil, covered with minute granulations on the inner half of the left plantar surface at the posterior circumference of the ball of the great toe. Both affections readily healed in a few days, having been kept clean and dusted with a small amount of dermatol. In both cases the birth was normal, through a normal pelvis, in the first occipital position.

What is the nature of this affection? Injuries of the presenting part by unskilled manipulation, or pressure marks could certainly be excluded; aside from other reasons, the presentation of the head, where the foot was affected, showed this. Some time ago Ahlfeld drew our attention to these congenital dermal defects, and his view, which had already been expressed by Hoffmann some years ago, that the part of the body involved had been adherent to a band of amnion, which latter had torn itself free and become macerated, but had left a wound behind at the spot where it was attached, which, under certain conditions, was not yet totally healed at the birth of the child, was fortunately corroborated by a case observed by Pinard and Varnier, in which the placenta after birth was found to be united with the head of the fetus by a well developed, strong band of amnion. That frequently not a trace of the amniotic cord can be found seems comprehensible, when we consider that portions of tissue, which have been separated from their continuity and thus injured in their nutrition, are very readily absorbed in the amniotic fluid.

It is important, from a forensic point of view, for the physician to be aware that dermal defects of this nature may occur congenitally in cases where all traumatism can be excluded.

CONTRIBUTION TO THE DIAGNOSIS OF RUBEOLA.

Leopold Bruck (*Der Kinderarzt*, 1899, x., 79) states that the fact that some authors deny the existence of rotheln, but look upon them rather as a peculiar form of measles, and not infrequently as a variety of mild and unusual cases of scarlet fever, very greatly hinders our arriving at an exact diagnosis in isolated cases, which latter has frequently to be made by exclusion. We must also concede that the symptoms of rotheln are frequently so mild that they may easily be confounded with other acute exanthemata, especially with such as frequently occur in infants, from unknown causes in the form of erythema, roseola and urticaria.

It is always difficult—as Jürgenen has also observed—to distinguish rubeola from a light attack of measles; it is hardly possible to mistake it for scarlet fever. The clinical picture of scarlatina is so characteristic that the experienced practitioner can very readily distinguish the border line between it and rubeola, and a "light scarlatina," as taught by certain pediatrists, does not exist.

Rubeola, as practice confirms, is a disease *sui genesis*, and is recognized by the fact that two to three weeks after infection all its accompanying symptoms make their appearance lightly, discreetly, and run their course in a short time. The long severe prodromal symptoms, the marked constitutional symptoms, and the complications and peculiarities that we meet with in measles are absent.

The disease, as a rule, begins suddenly; occasionally the patients will complain of malaise a day or two previously, a slight catarrh, some pain in the throat and neck, here and there of pains in the joints; no rise in temperature or acceleration of the pulse is, however, present. The exanthem progresses in stages, the body being covered within one to two days; at first the scalp, then the face, next the neck, the back, the chest, the arms, and finally the lower extremities, even to the palmar and plantar surfaces are invaded.

A peculiarity of the eruption is that it extends from above downward, and is most distinctly visible on the face, the extensor surfaces of the lower extremities, and on the buttocks. Its appearance in stages helps us to understand that the eruption may already fade on the face, while the lower extremities present intense redness. The exanthem at first consists only of a few bright-red, irregular (at times) circular macules, smaller than those of measles, which do not coalesce, and are frequently connected with each other by reddish stripes, which gives to the skin a marble-like appearance. In other cases small macules are mixed with larger ones, the smaller usually accumulate around the larger, forming groups with the latter. The back and the covered parts of the body are the seat of miliary vesicles. On the second day of their existence the macules take on a dark-red color, and before disappearing, which generally occurs in two to four days, they present a brownish shade, and finally disappear without leaving any pigmentation behind; scaling is either absent altogether, or, if present, is only very slight.

When the efflorescence first makes its appearance, the mucous membrane of the pharynx, of the respiratory tract and the conjunctivæ present a catarrhal process, the mucous membrane of the pharynx, especially the parts in the neighborhood of the uvula, are diffusely discolored; if the tongue is coated, its papillæ will be slightly swollen, and its tip somewhat reddened.

Enlargement of the lymphatic glands is considered a notable symptom of rubeola; those situated behind the ears and in the nape of the neck are most usually affected, and may already attain a considerable size within four to six days; they are not tender on pressure, and disappear again without showing any symptoms of inflammation. The urine does not contain any albumin.

The following two cases, which have occurred under Bruck's immediate supervision, and which have been closely studied in their beginning, course and disappearance, are described as examples of what has been above said about this.

Margar B., 9 years of age, went to bed April 4, 1898, in seeming good health, passed a restless night, during which she asked for water several times, and rose in the morning feeling well and in good spirits. The mother noticed some red spots on the face of the child, to which Bruck's attention was at once called. On careful inspection, the exanthem was found to consist in small, markedly circumscribed, bright-red maculæ, distributed behind the ears to the forehead and around the lips, not rising above the level of the skin, and disappearing on pressure. On removing the clothing the same slightly reddened maculæ were visible in small numbers on the neck, the chest, the back, and the extensor surfaces of the upper extremities. No photophobia, coryza, or cough were present, the mucous membrane of the pharynx was somewhat congested, the temperature normal. Within a few hours the whole face was well covered with these spots; they were also found on the lower extremities, especially on their external surface and in the gluteal region, as also on the back of the hands. The urine is free from albumen.

April 5th.—The exanthem begins to fade in the face and on the upper extremities, it is bright-red on other parts of the body. The glands of the neck are enlarged, but not painful.

April 6th.—The eruption has faded on the back, is still visible on the chest and on the lower extremities, changed to a brownish-red hue.

April 7th.—The eruption is disappearing, and is only slightly visible on the extensor surfaces of the lower extremities, and on the buttocks. The lymphatic glands on both sides of the neck are markedly enlarged.

April 8th.—The exanthem has disappeared, and the swollen lymph glands returned to their normal size within four days.

Exactly nineteen days later the maculæ, as described above, made their appearance on the face of the 4-year-old brother of the patient, without any previous symptoms, namely, on both temples, on the cheeks and around the lips; they are minute and of a rose color, not raised, do not coalesce, and disappear under pressure. Only a few can be demonstrated on the back, the upper extremities and the chest. Temperature 38° C. (rectal), pulse 94.

April 24th.—The maculæ have increased in number over the parts on which the child lies; on the cheek and gluteal region they are numerous, on the chest they appear in groups, and in the neighborhood of the joints they are increased, sharply defined and do not coalesce. The lymphatic glands are somewhat enlarged. The urine is free from albumen.

April 25th.—The exanthem is disappearing from the upper extremities, increasing in the gluteal regions.

April 26th.—The exanthem is fading, but can still be distinctly seen on the lower extremities and the buttocks.

April 27th.—The eruption has disappeared, barring a few dark-red spots, and the boy seems well.

Both children had previously suffered from measles.

PEDIATRICS

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ORIGINAL ARTICLES*

OBSERVATIONS ON THE MORBID ANATOMY OF TUBERCULOSIS IN CHILDHOOD,

WITH SPECIAL REFERENCE TO THE PRIMARY CHANNELS OF INFECTION.

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THE prophylaxis of tuberculosis is probably of greater importance in childhood than at any other period of life, inasmuch as it is at this age that the disease is most prevalent and most fatal. In order that prophylaxis may be satisfactorily carried out, it is most desirable that it should be ascertained, as far as possible, what are the most frequent channels of infection. With this object in view I have ventured to put on record here some observations made in the *post-mortem* room while I was Pathologist at the Hospital for Sick Children, Great Ormond Street.

These observations rest entirely on the results of *post-mortem* examination, and it must be pointed out that it is only from statistics made in this way that any accurate knowledge of the incidence of tuberculosis at particular ages and on particular organs can be obtained. Any one who has had experience of *post-mortem* examinations knows only too well that tuberculosis is by no means always easy to diagnose clinically in children; even a very extensive tuberculosis may not be recognized as such during life, while many a pulmonary or abdominal condition, thought clinically to be tuberculosis, is found *post-mortem* to be non-tuberculous, and this with no blame whatever to the clinician, for such error is common enough where the case has been examined carefully during life by several skilled observers.

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* Read before the British Medical Association, August, 1899, and published by courtesy of the *British Medical Journal*.

It is evident, therefore. that any statistics which include cases that are not verified by necropsy are of little or no scientific value in this connection. Large figures may be obtained by making use of the Registrar-General's returns, but as these are necessarily based on death certificates given in the vast majority of cases without *post-mortem* examination, they are of very little use in a scientific investigation, and may lead to entirely erroneous conclusions.

AGE-INCIDENCE IN CHILDREN.

With these preliminary remarks I pass to the consideration of the incidence of tuberculosis during the first twelve years of life, and it is of some importance that attention should be drawn to this, for the great prevalence of the disease during the period of infancy is a point of particular interest in the question of the source of infection.

The total number of cases of tuberculosis met with in 769 consecutive necropsies on children under 12 years of age was 269; so that in more than one-third of the total number of cases tuberculous lesions were found. Death was not due in every case to tuberculosis: in 43 out of the 269 cases death was due to some entirely different cause, such as diphtheria, heart disease, etc.

In the chart which is here drawn up, the incidence at the various ages is shown, and it will be seen that tuberculosis is far more frequent during the second year of life than at any other time.

The figures given show that 117 out of the 269 cases occurred within the age of 2 years, that no less than 43.4 per cent. of the whole number of cases of tuberculosis occurred within the first two years of life, and it will be seen that 56.5 per cent. occurred within the age of three.

THE MODE OF INFECTION.

It is evident that the main incidence of tuberculosis corresponds more or less exactly with the period at which milk forms, or should form the chief article of diet. The suggestion that milk, contaminated with the tubercle bacillus, is the cause of this frequency, follows as a matter of course. In a report on tuberculosis, issued by the Council of the British Medical Association (January 18, 1899), the following statement is made: "The mortality from tuberculosis in early childhood is not decreasing as it is at other ages in the United Kingdom, and the opinion that this great prevalence of the disease in infancy and childhood is due to infection through the alimentary canal by milk from tuberculous cows appears to be well founded."

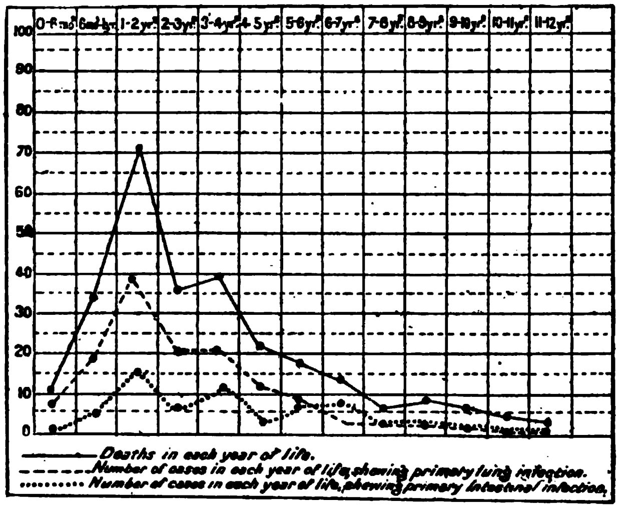

Chart showing relative frequency of tuberculosis in the first twelve years of life, and also of infection through the lung and through the intestine.

At first sight such a view appears extremely probable. It has been proved beyond dispute by Professor Delépine and others that the milk supplied, even to our large towns, frequently contains tubercle bacilli, and it has been pointed out by Professor Sims Woodhead that the intestines and the mesenteric glands are very commonly found to be affected with tubercle in young children. But further inquiry is needed before any conclusions can be drawn from these premises.

The frequency of tuberculous lesions of the intestine and mesenteric glands in infancy and childhood is indeed a well-ascertained fact, but the mere frequency of its occurrence is no evidence of its being the most common source of infection. As a matter of fact, pulmonary lesions would seem to be considerably commoner than intestinal; in the series of cases mentioned, the intestine or peritoneum was found to be affected in 141 cases, while pulmonary tuberculosis was present in 210.

Moreover, in estimating the significance of such frequency, it must be remembered that one of the striking features of tuberculosis in childhood is its tendency to generalization; it tends to affect almost every organ in the body, and it is therefore often a matter of extreme difficulty to determine which was the primary channel of infection.

Further, there is a special reason for the frequency of intestinal lesions as a secondary phenomenon in the tuberculosis of childhood; namely, that all young children, and many older children, swallow all their expectoration, and consequently, with a primary infection of the lung, tubercle bacilli are constantly being swallowed in large numbers, far larger probably than are ever likely to be swallowed in the worst milk, so that secondary infection of the intestine is extremely likely to occur.

The frequency, therefore, of tuberculous lesions in the intestine, or in the mesenteric glands is only what might be expected, and cannot be accepted as evidence that these structures form the primary channel of infection.

The difficulty of determining the primary channel in the tuberculosis of childhood is very great, for the reason already mentioned—namely, the tendency to rapid generalization of the process; there is, however, one feature of the disease at this age which to some extent diminishes the difficulty; the lymphatic glands in childhood form such a delicate index of the extent and duration of the tuberculous infection in the organs to which they correspond, that it is possible, in many cases, from a careful consideration of the glands, to determine, with at least a high degree of probability, the primary source of the infection.

THE SEQUENCE OF INFECTION.

In the observations recorded here, the greatest weight has, therefore, been attached to the condition of the lymphatic glands, and it will be necessary to point out briefly the grounds on which I have based my conclusions as to the sequence of infection in these 269 cases of tuberculosis.

The extent and character of the tuberculous process in the lymphatic glands is taken *ceteris paribus* as an index of the duration of the infection in the organs to which these glands correspond—for instance, the presence in a given case of much enlarged, almost dry, caseous glands in the mediastinum, while the mesenteric glands showed only small scattered foci of greyish-yellow tubercle, is taken to prove *ceteris paribus* that the infection through the lung was of older standing, and therefore the primary lesion. Further, the condition of the lymphatic glands is of more importance in determining the duration of the infection than the condition of the corresponding organs; for example, in a case in which there is no demonstrable lesion in the intestine, while the lungs show much, but not advanced tubercle, the presence of a large dry, caseous, or calcareous gland in the mesentery, contrasted with only greyish-yellow areas of tubercle in the mediastinal glands, would show that the infection through the intestine had been the primary lesion, in spite of the much more obvious lesion in the lung.

Lastly, the sequence of clinical symptoms is of little or no value, except, perhaps, as confirmatory evidence; for extensive pulmonary or intestinal lesions are often present without producing any special symptoms, and the first symptoms to appear are not always due to the primary lesion; thus in a primarily intestinal case the secondary pulmonary infection may be the first to produce symptoms.

GLANDULAR INFECTION.

In some cases, especially in the more chronic ones, the lymphatic glands are so extensively involved in many parts of the body that it is quite impossible to say which were first affected; thus it was quite impossible to determine the primary source of infection in 46 out of the 269 cases.

It must be pointed out that in the statistics given here tuberculous infection of the mediastinal glands has been assumed to occur through the lung, while the mesenteric glands have been assumed to be infected through the intestine. It is quite certain that such infection of glands may occur without any demonstrable lesion of the lung or intestine; this has been proved experimentally in the pig in the case of the intestine, by giving tuberculous material in the food; and in children, even with the most careful search, I have several times failed to find any naked-eye lesion of these organs, when the corresponding glands were nevertheless quite caseous. But though such cases occur, they are quite exceptional. In the 269 cases of tuberculosis, only 9 showed affection of the mesenteric glands without naked-eye lesion of the intestine or peritoneum, and 10 showed affection of the mediastinal glands, without the naked-eye lesion of the lung or pleura. In the light, therefore, of the experimental evidence, it seems almost certain that in the few cases in which no lesion of the lung or intestine is found, infection of the corresponding glands has occurred by the bacillus entering through the lung or intestine without producing any lesion, or rather any lesion which can be appreciated without microscopic examination. It has been suggested that in children, in a certain number of cases the mediastinal glands become infected, as apparently they may in the pig, by direct extension downwards from the cervical glands. I have made special investigation of this point, and have come to the conclusion that such a method of infection, if it ever occur in the child, must be extremely rare. I have seen one or two cases where it seemed just possible. I have seen none in which it was certain.

Even where there is considerable caseation in the glands at the upper part of the neck, those which correspond to the fauces, or those which correspond to the ear, it is usually found that lower down they become less and less affected until just above the clavicle, there may be little or no affection, while below the level of the first rib, especially on the right side, there is often an enormously enlarged, completely caseous gland, or group of glands, lying close to the trachea. Now, to suppose that the tuberculous infection, after gradually diminishing downwards, should for some unexplained reason "jump" completely several glands in the chain, and produce more extensive caseation in the mediastinal glands than at any part of its course in the neck, it is improbable, but not impossible; but when, in addition to this, it is quite certain from examination of a large number of cases that these tracheal glands are some of the earliest and most severely affected of the mediastinal glands in cases of pulmonary tubercle, even where the pulmonary lesion is very slight, and when it is pointed out that some degree of pulmonary tuberculosis is almost always found as part of the generalized tuberculosis, of which the affection of the cervical gland is a part, it becomes exceedingly improbable that the tracheal glands should have been infected in any other way than through the usual source, namely, the lungs.

There is, moreover, another strong argument which might be advanced against such direct extension from the cervical glands. It has been shown by Dr. F. E. Batten, in a most interesting paper on the Relative Frequency of Tuberculous Infection of the Lymphatic Glands in Children,* that of the glands in the mediastinum, those on the right side are much more frequently and extensively affected than those on the left. My own figures fully corroborate this: in 145 cases it was specially noticed that the glandular affection in the mediastinum was more advanced on one side than on the other; in 113 of these cases the glands on the right side were the more affected, while in only 32 was the affection greater on the left side; moreover, in 23 cases in which perforation of a bronchus by one of the caseous mediastinal glands had occurred, in 21 it was on the right side, in only 2 on the left side.

If, therefore, it be common for the mediastinal glands to be infected by direct extension from the neck, it should be found that there is a correspondingly large predominance of affection of cervical glands on the right side of the neck. Rough statistics of operations for enlarged cervical glands, thought to be tuberculous, have been collected for me very kindly by my friend Dr. Rowland, and they show no such predominance, even in these the most advanced cases, which are just those in which the direct extension might be expected to take place: of 100 cases in which one side was chiefly affected, 51 were on the right side, 49 were on the left; in other words, the two sides of the neck were almost equally affected. It has been suggested, further, that occasionally the mediastinal glands become infected by extension from the retroperitoneal glands. My own experience, so far as it goes, affords no confirmation of this. There are certain glands in the anterior mediastinum, just behind the ensiform cartilage, which are almost invariably affected in cases of tuberculous peritonitis, but I have found no evidence of any extension from these, or from the retroperitoneal glands to the tracheo-bronchial glands.

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* St. Bartholomew's Hospital Reports, vol. xxxi.

It will be seen, therefore, that so far as my own observations go, it seems extremely unlikely that the tracheo-bronchial glands are infected in any other way than through the lungs, except in very rare instances, some of which may be included in the cases which I have grouped together below as "uncertain," and I may say that I have been careful to separate all such doubtful cases, as by grouping together only those in which the source seemed certain, or fairly certain, a more accurate conclusion was likely to be obtained.

CHANNELS OF INFECTION.

As far as could be ascertained, in the 269 cases the channels of infection were as follows:

Lung	105
Probably lung	33
Intestine	53
Probably intestine	10
Ear	9
Probably ear	6
Bones or joints	5
? Fauces	2
Uncertain	46

It will be seen that while the lung appeared to be the primary channel of infection in 138 cases, the intestine was thought to be so only in 63. These figures, however, include children of all ages up to 12 years. It is convenient to consider also the incidence at various ages; this has been already shown in the chart given on p. 337, but may be more accurately understood from the following table:

Age.	No. of Cases.	Primary Channel of Infection.		
		Lung.	Abdomen.	Ear.
0–6 months	11	7	0	3
6–12 "	34	18	5	4
1–2 years	72	38	15	6
2–3 "	35	20	6	1
3–4 "	39	20	11	1
4–5 "	23	12	2	0
5–6 "	18	9	7	0
6–7 "	13	4	7	0
7–8 "	6	3	3	0
8–9 "	7	3	3	0
9–10 "	6	2	2	0
10–11 "	3	1	1	0
11–12 "	2	1	0	0

It would appear from these statistics that invasion through the lung is much commoner than through the intestine, both in infancy and in early childhood, while after the age of 5 years the chances of infection through the lung or through the intestine become about equal.

An interesting fact which appears from the above figures may be mentioned in passing, namely, that in 15 out of 269 cases, that is, about 7 per cent. of all cases of tuberculosis in childhood—the primary source of infection was the ear; and of these 15 cases, no fewer than 13 occurred within the first two years of life. No case of primary tuberculous disease of the ear was observed after the age of five years.

This frequency of infection through the ear in infancy is mentioned here, because it seems probable that this channel of infection resembles that of the lung in being really a respiratory infection—that if, by inhalation—the infection passing up the Eustachian tube, and therefore in any consideration of the prophylaxis of tuberculosis, these cases should be grouped with those of infection through the respiratory passages.

There is one class of cases which afford almost indisputable evidence of the method of infection in each individual case; I mean those in which death has been caused by some non-tuberculous disease, and *post mortem* a single gland or group of glands shows an old dry caseous focus, or just commencing tubercle, and perhaps the organs to which these glands correspond show similar evidence of past or just-commencing tubercle.

In these cases, as the disease has been arrested at an early stage or has not yet progressed beyond its initial stage, generalization has not taken place, or is only just beginning, so that it is possible to determine with almost absolute accuracy the primary channel of infection. As already mentioned, 43 out of the 269 cases were of this character, and, although they are included in the above statistics, a consideration of them separately is of great importance, for they afford, I think, conclusive evidence of the much greater frequency in childhood of infection through the lung than by any other channel.

In the 43 cases which died of diphtheria, heart disease, etc., the evidence of the primary source of infection was as follows:

Lung	26
Intestine	16
Ear	1

These figures, it will be seen, strongly confirm the statistics given above, and leave, I think, no doubt that infection through the lung is far commoner than infection through the intestine in childhood.

THE FREQUENCY OF INVASION THROUGH THE LUNG.

The special frequency of tuberculosis in infancy and in early childhood seems, therefore, so far as these observations go, not to be due to the milk diet to which it has been attributed, though there can, I think, be little doubt that this is responsible for a certain proportion of cases of tuberculosis at this age, about 17 per cent. of the cases during the first three years of life being intestinal in origin. Possibly the boiling of almost all the milk which is given at this age accounts for a much lower percentage of primary intestinal tuberculosis in infancy than during the later years of childhood, when milk is more likely to be given unboiled. It is of considerable importance, from the practical point of view, that this frequency of invasion through the lung should be recognized. Much has been said and written recently of the dangers of infection from the milk supply, and there has been a tendency to assume that this was the usual mode of infection in early childhood. We cannot be too careful in our precautions against tuberculous milk, but the above observations tend to show that food is not the only, nor even the chief source of tuberculous infection, and emphasize the extreme importance of purity of air for infants and young children.

It is probable that much of the tuberculosis of childhood is a direct result of the terrible overcrowding of the poorer population in our large towns. So long as whole families, and often large families, have to live night and day in one ill-ventilated room, and among them too often one or more are already infected with tubercle, and ready in turn to infect others, it is not to be wondered at that primary infection through the lung is so common in infants and young children. It seems likely that the special liability to this method of infection during the earlier years of childhood is directly related to the special inability at this age to escape from the foul atmosphere of "home" even for a few hours in each day, and as the child grows older, and passes more of its time even in the comparatively pure air, and the wider and more cleanly streets, or in the rather better ventilated school room, the risk of pulmonary infection becomes by so much the less.

The above remarks apply, of course, mainly to the poor, inasmuch as all the observations recorded above were made on hospital patients; but the principle applies to all classes alike. Fresh air is absolutely essential to the well-being of children, and badly ventilated rooms, and undue confinement indoors, especially where there is already tuberculous infection in the house, constitute a very real danger to children, and particularly to children predisposed by heredity to tuberculous infection. For such children, indeed, where circumstances render it possible, residence in the pure atmosphere of a dry, elevated country or seaside district, with an almost open-air existence during the first six or seven years of life, may be the way of escape from an early death from tuberculosis; and where such prophylaxis is impossible, abundance of open air in the parks, and in the suburbs of our large towns, and such country air as can be obtained from time to time, may do much to reduce the risk of tuberculous infection through the lungs in the town-bred child.

CONCLUSIONS.

The conclusions which may, I think, be drawn from the above observations are as follows:

1. The commonest channel of infection with tuberculosis in childhood is through the lung.

2. Infection through the intestine is less common in infancy than in later childhood.

3. Milk, therefore, is not the usual source of tuberculosis in infancy, perhaps owing to the precautions taken in boiling, sterilizing, etc.

4. Inhalation is much the commonest mode of infection in the tuberculosis of childhood, and especially in infancy.

5. The overcrowding of the poorer population in the large towns is probably responsible for much of the tuberculosis of childhood, and prophylaxis must be directed to the prevention of this overcrowding, the improvement of ventilation, and the inculcation of the extreme importance of fresh air during the earliest years of life.

THE TUBERCLE BACILLUS IN THE STOMACH.

The President asked Dr. Still how the tubercle bacillus was affected by the acid digestion of the stomach. Dr. Still replied that no doubt actual infection of the stomach was extremely rare. He only knew of five cases of tuberculous ulceration of the stomach which he had himself reported. It was, however, evident that the gastric juice did not destroy the bacillus, as by the time it reached the intestine it was manifest that it had retained its infective power. The gastric juice would, however, seem, as a rule, to exert a protective power as far as the stomach itself was concerned.

Chronic Eczema Successfully Treated by the Roentgen Rays.—Dr. ALBERS-SCHOENBERG reported a number of cases to the Hamburg Surgical Society (29, xi., '98), among these that of a child, 11 months old, suffering from a chronic impetiginous eczema of the head; the latter healed with extraordinary rapidity, accompanied by great loss of hair, which again began to grow after a few months. Only a few (ten to twelve) sittings are needed for the cure of eczema.—*Münchener medicinische Wochenschrift.*

The Contagiousness of Alopecia Areata has been again demonstrated in four cases observed by B. PLONSKI, affecting two pair of brothers and sisters, who contracted the disease one after the other from using the same combs. The patients were otherwise perfectly healthy, with no hereditary taint, and every reason for the supposition of a trophoneurotic origin of the disease was absent.—*Dermatologische Zeitschrift*, v., 3.

A mother and daughter, suffering from lupus, were seen by Dr. EDW. MEYER, who presented the patients before the Berliner laryngologische Gellschaft (1, iv., '98). Both had made use of the same towel and wash rag. The case was obviously one of transference of lupus from one person to another.—*Berliner klinische Wochenschrift.*

REMARKS ON TUBERCULOUS ADENITIS.

By George Morgan, F.R.C.S., Edin., etc.,
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I SHALL confine my remarks to the glands of the head and neck, and principally to my own personal experience in the treatment of the same.

Tuberculosis adenitis of the head and neck is nothing like so common as it was fifteen years ago. This, I believe, is true, both as regards the number and the severity of the cases. In 1884 the gland cases requiring operative treatment admitted into the Children's Hospital, Brighton, were a little over 6½ per cent. of the whole number of patients admitted. The number has gradually been falling off; it now stands at about 3½ per cent., and even these figures do not nearly represent the improvement that has taken place, as we now admit cases in earlier stages than formerly.

ETIOLOGY.

The chief points of interest in the etiology are clustered around the soil, that is the tuberculous individual; and the paths by which the seed, that is the tubercle bacillus, travels to the glands.

The special fitness of certain constitutions for the development of tuberculous gland disease may be wholly inherited or acquired, or a slight hereditary tendency may be markedly emphasized by a vicious environment. I am paying a deservedly high compliment to Brighton's medical officer of health and its sanitary officers when I tell you we know very little, indeed, of acquired scrofula or parochial struma in Brighton. In quite 80 per cent. of my cases I was able to clearly trace the inherited tendency, in addition to which about 2 per cent. were the subjects of congenital syphilis. I have no doubt that the falling off in the number of cases I have referred to is principally due to the improved surroundings of the children of the poor. Depend upon it if, in some of our large towns, we heard more about condemned areas, we should hear less about acquired scrofula. Unfortunately the marriage and intermarriage of persons predisposed to the ravages of tuberculosis is beyond the jurisdiction of even the medical officer of health;

consequently the inherited type of soil, like the poor, will "always be with us."

GLANDS IN RELATION WITH CUTANEOUS AREAS.

Text-books of anatomy classify the lymph glands of the head and neck into superficial and deep, and anatomically that classification is simplicity itself; but when one studies the glands pathologically, and especially in their relation to the tubercle bacillus, one feels it matters but little whether the glands are superficial or deep to the cervical fascia. The one important factor is, does the gland drain a skin surface or a mucous surface? I am conscious that in a classification of this kind there would be overlapping, as some glands, such as the suprahyoid and submaxillary, drain both skin and mucous surfaces; consequently, they might be divided into those glands which drain a mucous surface and those glands which drain a skin surface only. Everyone who has examined a large number of cases of tubercular adenitis of the head and neck will at once admit the far greater liability to the trouble that exists in those glands which drain the mucous surfaces, especially where lymphoid tissue is richly distributed. In those glands which drain both skin and mucous surfaces, the greater liability to trouble from the latter surface is clearly demonstrated, and in none better than in the suprahyoid. It is rare to find these glands affected from a lesion on the skin; the lesion is, in a great majority of cases, on the mucous surface of the lip, or the gum below the incisor teeth. In the following list I have given the order of frequency in which the different glands were affected in my own cases:

1. Upper division of the deep cervical.
2. Sub-maxillary, especially near the angle of the jaw.
3. Suprahyoid.
4. Lower division of deep cervical.
5. Parotid.
6. Superficial cervical.
7. Posterior auricular.
8. Occipital.
9. Internal maxillary, or deep facial.
10. Posterior pharyngeal.
11. Lingual.
12. Buccal.

I have only seen one case of tuberculous enlargement of the gland on the buccinator muscle; that seemed to have arisen in connection with caries of the malar bone.

The usual path by which the tubercle bacillus reaches such glands as the post-auricular, occipital, and superficial cervical, is by the skin. The skin of face, neck, and scalp, being affected by superficial wounds, eczema, impetigo, porrigo, etc., allows the passage of the bacillus. In one case—a girl of eight—I believe I was able to trace the origin of a large tuberculous post-auricular gland to the scratch of a dressing-comb on the scalp over the right ear; that was in the same house where a younger brother was dying of phthisis.

Impetigo seems to have been a more frequent cause of gland trouble than eczema. During the last few months I have seen two cases of impetigo of the face, followed by tuberculous enlargement of superficial glands, in houses where, at the same time, there was an active case of phthisis, and where, probably, tuberculous dust was present from carelessness in the disposal of the sputum. Some authorities, with Professor Unna, believe impetigo is really a skin tuberculosis.

Lupus of the face and ears and strumous ulcers of the cheek may likewise affect the superficial glands, and occasionally one sees such a case; but the cause is not a very frequent one. Mr. Frederick Treves has pointed out how much more potent a suppuration wound is than a non-suppurative infection, and especially if there is retained pus, as in porrigo of the scalp. I believe the cause in the case of those glands that simply drain skin is, in the great majority of cases, either a superficial wound or impetigo which has been freely scratched and the crusts picked off by the child's nails, in the dirt of which the bacillus can sometimes be found.

GLANDS IN RELATION WITH MUCOUS SURFACES.

Turning now to the glands that drain mucous surfaces, we find that there are three sites specially favorable for the entrance of the tubercle bacillus:

1. Teeth and gums.
2. Tonsils.
3. Naso-pharynx, especially the vault when affected by adenoids.

TEETH.

Spongy and congested gums and carious teeth or stumps are frequently followed in the strumous child by tuberculous enlargement of the submaxillary and deep cervical glands. It needs no great pathological faith to believe in the possibility of the entrance of the bacillus along the side of a loose tooth, or through the mucous membrane of spongy gums into the lymphatics, and so into the lymph glands; but if we were told that the bacillus could pass through a living pulp, down the root, and by that way reach the lymph gland, we should not unreasonably ask for the evidences. I take it the following evidence is conclusive on this point. Dr. H. Kerner Halle, of Berlin, has lately published his observations and experiments on this point. The author narcotized dogs, laid bare the pulp of certain teeth, painted in some Prussian blue, and closed the cavity with cement. After two or three days the dogs were killed, and the pulp of the teeth, as well as the lymphatic glands, examined microscopically. Particles of Prussian blue were found dispersed through the whole pulp up to the apex of the root, and also in the lymphatic glands, although in very small quantities. How to explain this capability of absorption of the pulp is a further chapter. It is a fact that in most researches lymphatic vessels in the pulp could not be discovered. This absorption, then, does not take place in a regularly formed lymphatic path, but it is evidently done by the intercellular stream of liquids in the tissue, probably even simply by wandering cells which absorb the color and carry it. If once the matter gets beyond the apex of the roots there is no further obstacle in the way of its carriage to the lymphatic glands. Apart from this experimental investigation, the author tried to prove, clinically, that dead teeth, as well as living defective teeth, may cause enlargement of the lymph glands.

He examined 3,161 children, with swelling of the glands, with the following result:

2,334, or 78⅘ per cent. had bad teeth of the third or fourth degree in the lower jaw.

In 1,646, or 70 per cent. of these children the bad teeth, with regard to their position, intensity of illness, etc., corresponded exactly to the position and degree of the swelling of the glands.

More than half of all the teeth made responsible for the swelling of the glands, had still a living pulp.

As further evidence on this point, I quote from a paper read before the Chicago Dental Association by Mr. George W. Cook, of Chicago, giving his experience of the bacteriological examination of the mouth of dental patients. Cultures and cover-glass preparations were made, and, in many cases the tubercle bacillus was found, occasionally in the saliva, but most frequently in the pulp of the teeth, or in scrapings taken from around the teeth. A point of interest is that, with one exception, in all the cases the particulars of which he records, the patients were young (girls—13, 9, 17, 9, 11, 9; males—18, 11, 13). In most of the patients the bacillus was found at each visit.

The sulcus, where the mucous membrane is reflected from the gums to the cheek or lip, is a frequent point of entrance for the bacillus. This is especially true of the gum below the lower incisor which drains into the suprahyoid glands. A school-boy fell with his slate-pencil in his mouth, causing a lacerated wound of the mucous sulcus below the incisors. Three days after the wound had an unhealthy appearance, and the suprahyoid glands were enlarged. These remained enlarged for eight and nine weeks, and then, softening, were incised, and the usual tuberculous matter scraped away. This same spot in the mucous sulcus is not an infrequent spot in which to find irritable and dyspeptic ulcers, and should always be examined if the suprahyoid glands are enlarging.

TONSILS AND ADENOID TISSUE OF THE NASO-PHARYNX.

There can be no doubt that, as regards the deep cervical and glands about the angle of the jaw, the two chief points of infection are the tonsils and the lymphoid tissue of the naso-pharynx, and it is, indeed, difficult to say which of the two is the more important. It is interesting to note that in many cases in which they have probably acted as the channel of infection, there is no manifest enlargement of the organ, the tubercle bacillus having passed through, apparently, a healthy tonsil. That it is capable of doing this there can be no question.

Mr. Spencer, in his valuable lectures on the Pathology of the Lymphadenoid Structures, says: "If a culture of tubercle bacilli be injected into the trachea of an animal, the bacilli pass through the intact mucous membrane and infect the neighboring glands. Similar results may be obtained by feeding animals on material containing tubercle or anthrax bacilli, which pass through an uninjured intestine." Mr. Spencer, in the same lectures, further says: "It is quite the exception to see a combination of hypertrophied tonsils or adenoid vegetation, and tuberculous glands in the same patient."

I cannot say that has been my experience. In very many of my cases there was some enlargement of the tonsil, or evidence of adenoids of the naso-pharynx. Indeed, I feel it is impossible to emphasize too strongly the danger of adenoids in a child predisposed to gland trouble. The two media by which the tubercle bacillus must be conveyed to the tonsil are by inhaling tuberculous dust and drinking tuberculous milk. Now pathologists are unanimous that the bacillus more frequently enters the body by inhalation than deglutition, the bronchial glands being affected fully four times as frequently as the mesenteric; hence the danger of oral respiration, and the danger of adenoids as an indirect cause of tuberculous adenitis. But adenoids have more than an indirect influence in the cause of gland trouble; they are themselves frequently the seat of a local tuberculosis.

Observed.	No. of Cases Examined.	Tubercle and the Tubercle Bacilli Found.
Gottstein	33	4 times.
Brindel	64	8 times.
Pluder and Fisher	32	5 times.
McBride and Logan Turner	100	3 times.

The last-named authorities, although their results show the lowest average, believe that with more careful investigations the results of even Brindel (12½ per cent.), and Pluder and Fisher (15 per cent.), will be found too low.

The tonsils, too, are frequently tuberculous, but as to the relative frequency I have at present found no record. Professor Sims Woodhead calls attention to its presence both in man and pigs fed on milk from tuberculous cows, and Dieulafoy's experiments, while not proving that the tonsils were themselves tuberculous, are nevertheless exceedingly interesting in showing how frequently they are infected with the bacillus. He obtained from various hospitals in Paris, but chiefly from the Hôpital des Enfants, a number of portions of tonsils and adenoid vegetations removed on account of overgrowth. Hypertrophied tonsils from sixty-one cases were inoculated into guinea-pigs, and eight of the animals became tuberculous. Adenoid vegetations from thirty-five cases were inoculated and seven of the guinea-pigs became tuberculous.

Taking these facts into consideration, we see at once the futility of excising an enlarged gland not yet suppurating, whilst leaving behind a probable cause in the shape of tuberculous ulceration of the lymphoid tissue of the naso-pharynx or a tonsil containing tuberculous foci.

TREATMENT.

For those children who are severely handicapped by the inheritance of a tendency to tuberculous gland disease, a great deal can be done, both in the shape of prevention and cure.

As regards prevention, it can scarcely need emphasizing, at this date, that all milk should be boiled, and that the child's environment should be watched with the greatest care. The child should not be allowed to visit tuberculous houses, or rooms where phthisis has been treated; especially if the room is undergoing repairs, or if the walls are being stripped. There can be no question as to the advisability of a frequent examination of the throat, naso-pharynx and gums. Loose teeth, carious teeth, and stumps should be removed; cavities should be thoroughly disinfected and filled. Adenoids, if sufficiently pronounced to cause symptoms, should be promptly removed, likewise enlarged tonsils, especially if liable to repeated attacks of catarrh, or if they have an irregular surface.

If tuberculous glands appear, and they are discovered in an early stage, undoubtedly a great deal can be done for their cure without operative interference. As regards the general constitutional treatment, I have no new suggestion to offer.

Before commencing the cod liver oil, which, in the majority of cases, does so much good, it is often well to give a little grey powder, and alkaline mixture before meals, for a few days, and then whatever suits the child best should be the tonic selected. For the majority, iodide of iron with malt, is good, and is generally liked by the children. Of far greater importance than any drug is abundance of fresh air and sunlight—if possible, at the seaside. Tepid sea-bathing, followed by friction, is good; in a word, all means that tend to improve the child's general health, and raise his tone, should be adopted.

It is the local treatment in which I am specially interested and as to which I wish to make a suggestion. Teeth, tonsils, and naso-pharynx should be attended to. Stomatitis and small ulcers of the lips and gums should be promptly treated. In treating the glands themselves we should always think of the part of the skin or mucous membrane the diseased gland represents, and then apply the remedy to that spot. For instance, the gland at the angle of the jaw and the upper deep cervical drain the tonsil, therefore apply the remedy to the tonsil. I was first led to try this plan accidentally.

I prescribed for a young lady of twenty, who was suffering from chronic pharyngitis, an application of iodine and iodide of potassium in glycerine, to be painted on the tonsils and pharynx each night. She returned in six weeks with her throat trouble much better, and delighted at the disappearing of an enlarged gland at the angle of the jaw which had been in evidence for over two years. I at once started to use the application in my hospital and private practice, and, in the majority of cases, with the greatest benefit. In many cases its action was very marked.

A late colleague of mine at the hospital had a patient of five with a number of markedly enlarged glands of the deep cervical group and also the suprahyoid gland. The skin was not adherent, and they were freely movable. Dr. Whittle was about to excise them, but postponed the operation that the above plan of treatment might be tried first. For six weeks the pigment was painted on the tonsils and on the gum below the lower incisor teeth. At once improvement set in; eventually the glands entirely disappearing. The application is composed of iodine, 12 grains; potass. iodid, 15 grains; ol. menth. pip., ♏ ij; glycerine, ℥ j.

It will not affect all glands, but if applied before softening takes place, it undoubtedly reduces the majority. I have been using it now for seven years in a large number of cases, and always adopt that line of attack first. Comparing the experience of the last seven years with those of the seven years previous, I have no hesitation in saying that the results have proved very gratifying. For the superficial glands draining the skin I use iodide of potassium ointment, well rubbed into the skin, representing its surface of absorption.

The old method of direct injection of iodine into the gland invariably spoiled the syringe, injured the child, and damaged the surgeon's reputation. Nor need it surprise anyone, for a gland that is busy fighting its internal foes is very likely to throw up the sponge when it receives an unfriendly stab from the outside; hence the importance of shielding the gland as far as possible from mechanical injury and severe cold.

If, after a fair trial of constitutional and local treatment, the glands still increase in size or show signs of softening, the sooner they are removed the better. For those which are completely broken down it is better to incise the capsule at once and scrape it out with a sharp spoon, then dress the inside of the capsule with pure carbolic acid; afterwards, if the capsule can be teased out, so much the better; but it is a pity to waste time trying to dissect out the remains of a gland that is, in reality, only a bag of pus. It is certain to burst; and by the dissection the connective tissue around the gland has been opened up, into which the tuberculous pus is distributed and may be carried to other glands.

In excising glands, no pressure should be made on the gland, either by the fingers or by pressure forceps of the various special types. If several in a group are affected, the lower one should be taken first, working up in the opposite direction to the lymph current. The danger of pressure is, that some of the tuberculous material may be pressed from the medulla of the gland into the efferent vessels, the valves of the lymph vessels allowing the current to pass by way of the efferent vessels, and preventing its passage into the afferent vessels. To my mind this is the only explanation of a quick relapse a few days after the excision of glands. I have seen this happen not infrequently both in my practice and in the practice of other surgeons. Perhaps the dissection has been a very careful one: the gland has come out without bursting, the wound has healed by first intention; but to the chagrin of the surgeon no less than to the disappointment of the patient, in seven or fourteen days other glands of the same series appear as large as, or even larger, than the one excised. Since using greater are in avoiding pressure on the gland, I have certainly had little or no trouble from this source.

THE TIME FOR OPERATION.

Mr. H. Betham Robinson, after thanking Mr. Morgan for his practical remarks, endorsed all that he had said, and thought it could not be written up too large that the enlarged glands were always due to a local cause, which must be looked for and treated. Adenoids were perhaps the most frequent cause, and cases of difficulty prevented themselves when the adenoids were associated with marked glandular enlargement. The rule he laid down was that if the glands were markedly softened they should be dealt with first, and afterwards the adenoids should be treated. If the glands were not softened, the adenoids should be removed, leaving the glands to give the enlargement a chance of subsiding; both should not be removed at the same time.

Mr. George Morgan, in reply, agreed that it was sometimes difficult in cases of adenitis with caseous glands to know which to attack first. As a rule, unless the glands were mere bags of pus, the anenoids should be excised first and the glands dealt with afterwards.

THE CAUSATION OF NIGHT TERRORS.

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THE causation of night terrors in early childhood is one of the most debated of the smaller points in medicine, and the very diversity of the explanations offered is an indication that no quite satisfactory theory of causation has been found. Doubtless the looseness of the name, and the fact that it covers more than one class of disorder, is to some extent responsible for the unsettled and even contradictory opinions on the subject, and my friend and colleague, Dr. Coutts,[1] has done an important service in attempting to differentiate two classes of disturbed sleep in children, in one of which, in his opinion, the disturbance is due to reflex stimulation of the sleeping child; and in the other the restlessness is caused by disordered central impulses. He would restrict the term "night terrors" to this second class, and include the first class with the group of nightmares. This classification is similar to that suggested by Silbermann,[2] who would also make two divisions of the affection in question, grouping in the first class those cases in which disturbance of sleep is secondary to some other disorder, mostly of digestion; and in the second class those cases in which no such causes could be ascribed, which he therefore calls idiopathic, and which he assumes to be due to disordered brain functions in a neurotic child. The latest writer on the subject, Dr. Leonard Guthrie,[3] whose valuable paper has appeared since I began to put these notes together, adopts Silbermann's classification, though deprecating the somewhat too rigid separation of the the two classes of cases. Most other writers have laid stress alternately on the symptomatic or idiopathic nature of their cases; and the idiopathic forms have usually been explained as due primarily to cerebral causes. Several authors consider that digestive derangements explain most of the cases; thus West[4] described them as due to constipation, as a rule, though he rerelates a case in a child of 11 months in which diarrhea was the proximate cause. Moizard[5] noted the absence of convulsions during or after the night starts, as differentiating them from epilepsy, and regards digestive disorders as the principal factor in their production. Eustace Smith[6] points out their frequent association with disturbed gastro-intestinal functions in a class of cases of what he calls mucous disease, coming on after whooping-cough and during dentition.

Cheadle[7] writes of night terrors: "They are in the vast majority of cases not indicative of brain disease, nor, indeed, of any serious disease; they are nothing more nor less than children's nightmare, bad and terrifying dreams, and are produced by some internal disturbance and irritation, having their seat almost invariably in the region of the alimentary canal." Henoch[8] described them, too, as merely "terrifying bad dreams"; he could not associate them with digestive, circulatory, or respiratory troubles. Comby[9] also explains them as terrifying dreams, nightmares due to alimentary derangements. He points out their frequent association with rickets, an association which Jacobi[10] and Dawson Williams[11] also note.

Enlarged tonsils and adenoids were the probable cause of night terrors, in some cases reported many years ago by Warrington Haward,[12] and the same association has been noticed by Baginsky,[13] by Osler,[14] and many other writers. Starr's *Encyclopædia*[15] gives a reference to a case in which errors of refraction and astigmatism were the cause of persistent night terrors, and Leonard Guthrie notes a type of cases in which migraine and night terrors are associated with errors of refraction.

Debacker,[16] in an old thesis, gave a complete history of night terrors apparently caused by the presence of a tapeworm, and cured by its removal, and Still[17] showed good reason to ascribe their occurrence in one case to the presence of oxurides in the vermiform appendix. Goodhart,[18] Donkin,[19] and Angel Money[20] have pointed out how frequently rheumatic children are subject to night terrors. Guthrie gives some interesting personal experiences of bad dreams, which he ascribes severally to aural vertigo, to profuse night sweats, to febrile temperatures, to nasal catarrh; but these are obviously to be included in the nightmare group in Dr. Coutt's classification, and not to be considered now.

There is, on the other hand, a large group of writers who look upon this disorder as evidence of a neurosis allied to epilepsy, if not actually due to it. Clouston[21] classes them among his "developmental insanities," and considers that the state has in it "something of dreaming, something of a mental epilepsy, something of somnambulism." Angel Money, though pointing out the rheumatic association before alluded to, considers night terrors to be a form of cortical epilepsy. Colman[22] dwells on their analogy with migraine; they are allied to epilepsy, yet few subjects ever become epileptic: like migraine they are often connected with disease of other organs, and the alimentary canal is principally at fault. Coutts considers that night terrors proper, as distinguished from nightmares, are always evidence of central neuroses. Ollivier[23] and Simon think they are allied to epilepsy and hysteria, and are always the stigmata of a degenerate.

An analysis of these various statements shows the authorities to be divided into two main camps, one of which holds that night terrors are symptomatic of some organic disorder, causing reflex stimulation, and the other that they are due to central neuroses, allied to epilepsy. I have thought it worth while to examine into such cases as have come before me during the past nine months, selecting only those in which night terrors were a prominent feature in the tale of symptoms, dwelt upon by the mother of the sick child, and I have endeavored to exclude the cases which might be described as simple nightmare, with causes temporary and ready to hand, such as a sudden spurt in school work, an attack of indigestion, a rise in temperature, etc. I have investigated the physical condition of such cases as could not be thus excluded, and I have been struck with the large proportion of instances of morbus cordis which I have found in these cases; an observation which brings me unexpectedly into line with a group of writers who laid stress on rheumatic conditions as associated with night terrors.

I am led to discount very largely what I may call the epileptic condition of their causation. I have collected 30 cases for the purposes of this paper, of which I shall inflict on you here only the analysis of the causes. The ultimate common factor seems to me to be almost always dyspnœa, not of so urgent a type as to be painful, or even always conscious, but such as nevertheless adds a sustained discomfort to sleep.

In nearly two-thirds of my cases the night terrors were associated with early morbus cordis. To be more exact, in 17 out of 30 cases there were definite valvular murmurs of the heart. This approximates curiously to Goodhart's statistics of 37 cases of night terrors in which a rheumatic family history was present in 19 instances. In 2 other of my cases there was increased frequency and irregularity of cardiac action without definite murmur in children with a rheumatic history. In 5 cases the causes seem to be narrowed down to enlarged tonsils and adenoids, in 2 other cases to chronic rhinitis. In 2 cases there was obstinate dyspepsia, which seemed to be the proximate factor in the production of night terrors. In 1 case only was there a definite history of previous epileptic seizures in a child with an epileptic family history; and in 1 case there was chronic uticaria pigmentosa very widespread, and itchy, which seemed to be the cause of persistent night terrors of more than a twelve-months' duration. The ages of the children varied from 6 months to 11 years, and there were 19 girls to 11 boys.

I would argue this proposition: Night terrors are caused by a reflex stimulation, produced almost always by dyspnœa, moderate in degree, but prolonged, and they occur in the early hours of sleep of young children. I explain the absence of respiratory diseases in my list by the observation that severe dyspnœa, such as they usually produce, is too violent a stimulus to furnish the "still small voice" of reflex suggestion. The stimulus is usually of the character of what Bain[24] called an organic sensation, vague in its mental character as compared with the stimulations of special sense, but attended by voluminous though ill-defined feeling. He gives the instance of suffocation as a type of these sensations. The dyspnœa which precedes night terrors is always moderate. The discomfort, initially feebly realized, becomes massive by its prolongation, and is translated, in the child's peculiarly fantastic turmoil of subconsciousness, into the mental content of terror, associated with an external cause. It is in early sleep, in the borderland, as Bevan Lewis[25] writes, between loss of subject and object consciousness, that this distortion of obscurely felt sense impressions into hallucinations takes place. Soltmann adds the ingenious explanation that in sleep the inhibitive power of the senses, chiefly of sight, being removed, reflexes are more uncontrolled. The hallucinations are mostly visual; indeed, Ollivier speaks boldly of night terrors as caused by spontaneous irritation of the visual centres in the brain, which evokes images analogous to those which in the waking state are caused by peripheral excitations of light. But Colman records the occurrence of hallucinations of hearing and of common sensation, and one of my cases had a persistent auditory hallucination.

DEDUCTIONS FROM THE CASES EXAMINED.

1. Night terrors are in the great majority of cases caused by disorders productive of moderate but prolonged dyspnœa.
2. A preponderating number of cases are found in rheumatic subjects with early heart disease.
3. A considerable proportion of cases are due to obstruction of nasal cavities and fauces.
4. Digestive disturbances do not play the important part in causation that is often assigned to them.
5. The evidence for their causal connection with epilepsy or allied neurosis is scanty.
6. The attacks occur in the subconscious stage of early sleep, and are confined to young children under puberty.

Dr. CAUTLEY thought there was another fact of importance, and that was the association of night terrors with educational overpressure. Many cases occurred in children a few weeks or months after first attending school. He had also been struck with the association of somnambulism with night terrors in these children, and ascribed both to the increased irritability of the brain, due to excessive or too early stimulation. Board schools had a good deal to answer for as a factor in the promotion of childish disorders.

Dr. MASTERS (Parkstone) believed that one exciting cause of night terrors in young children was the highly injudicious treatment of the nurses, who threatened them, for instance, with "bogies." Worms were also probably a cause, and he quite endorsed the remark that high pressure in teaching these young subjects had much to answer for.

Mr. JAMES GREEN thought that in the matter of overpressure at school any fresh occupation was liable to occupy a child's attention by night in his dreams as well as by day. He considered that dyspnœa was a prominent cause of dreams.

Mr. Mansel Simpson (Lincoln) said that in night terrors he had always found the administration of bromide of potassium very useful.

Mr. Herbert Wright (Natal) said that he agreed generally with what Dr. Graham Little had said; but he should have been glad to have had his opinion as to the association of somnambulism with these night terrors. He had seen several cases in which the two were associated, and he could recall in particular the case of a boy of 12 whom he had been called to treat. The boy was thin and delicate, and of a highly nervous temperament. He suffered from nocturnal enuresis and from incontinence of feces by day after the slightest exertion. He was subject to severe night terrors, which came on an hour or two after going to bed. Sometimes these terrors were replaced by somnambulism, and he got up from his bed, went down the staircase, and when led back, went to sleep, and remembered nothing next morning of his midnight excursions. The boy had suffered this way two or three years. No organic disease could be found. He had found potassium bromide, with or without chloral, useful in these cases, and the boy he had mentioned was always relieved by these drugs, good sleep following. He was convinced that night terrors and somnambulism were closely associated.

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AN OPERATION FOR THE RELIEF OF CONTRACTION OF THE FOREARM AND HAND FOLLOWING INFANTILE HEMIPLEGIA.

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THE deformities of the arm and leg resulting from infantile hemiplegia are such as to seriously cripple a child and render him frequently a dependent in adult life. For some time past it has been my custom to divide the contracted structures in the leg and foot. As a rule the plantar fascia and tendo Achillis require division, but in more severe cases the hamstring tendons and those of the flexors of the hip also need attention. It seems that neurologists do not often recommend surgical interferences in these cases, but content themselves with measures of a simple nature such as massage, tonics, and, if spasm be present, the administration of antispasmodics. There comes a time, however, in nearly all these cases, when the cortex cerebri ceases to send out irritating discharges and the condition is then one of contraction, of unbalanced and insufficiently opposed muscles. This is the stage to select for operation, either in the upper or lower extremity.

The position usually assumed by the upper extremity is as follows: The forearm is flexed and fully pronated, the wrist is flexed, the fingers also, and the thumb is flexed into the palm and adducted, that is, there is some loss of power in the extensors and supinators, with unbalanced action of the flexors and pronators. This loss of power is very variable. If it be complete it is useless to attempt operation. But it is difficult at first sight to form a definite opinion as to the possible extent of recovery of a partially paralyzed muscle, for the following reasons: Paralyzed or semi-paralyzed muscles are always in a state of elongation owing to the excessive contraction of their opponents, and the weakened muscles therefore undergo a progressive loss of tone. If by any means we can secure rest for paralyzed muscles, they rapidly recover to a very considerable extent and do so in an unexpected manner.

The operation which is about to be described has two objects, namely, to lessen the power of the flexors and pronators, and to transfer some of the pronating force in such a a way as to make it a supinating force, thus subtracting from the excessive pronation and adding to supination. From a series of observations on these contracted arms and hands, I have been led to think that the most effectual hindrance to the proper use of the limb is the excessive pronation. Among the muscles arising from the internal condyle are two powerful pronators, the pronator radii teres and the flexor carpi radialis, the latter of which acts as a flexor of the wrist. The internal condyle muscles also act as powerful flexors of the elbow, so that in attacking them at some portion of their length it is possible to get at once to the root of the trouble. On several occasions in former years I have divided the biceps tendon at the bend of the elbow, but without any good resulting, and it is now quite evident to me that as the biceps is a great supinator of the forearm, such procedure is irrational.

The operation, then, which I practice is as follows: The pronator radii teres is detached from its radial insertion, and passed through a gap made in the interosseous membrane and then around the posterior surface of the radius, and reattached to its original site. By this means it becomes a supinator instead of a pronator. The flexor carpi radialis is divided at the wrist, and here, too, the tendons of some of the muscles arising from the internal condyle are also divided. By this means the excessive pronation of the forearm is diminished and the supinating force added to, while the flexion power at the elbow, wrist and fingers is diminished. It may be asked, Does the forearm after the operation remain in permanent state of supination and the hand of extension? This result does not follow, for the pronator quadratus has not been touched, and the deep flexors of the fingers and thumb, which are also untouched, retain sufficient power to balance the extensors. Besides, by carefully graduating the gap made by cutting the tendon at the wrist by a suitable splint, the elongation which they can be made to undergo can be regulated to a nicety.

For the purposes of illustration three diagrams are appended which deal with the method of subtracting from the pronating power and adding to the supinating power. Fig. 1

shows the pronator radii teres (*a*) in its natural position acting as a pronator, while the flexor carpi radialis (*b*) is almost hidden by the pronator radii teres and radius. In this diagram there should be more flexion of the elbow than is seen. Fig. 2 is a front view of the forearm now supinated by passing the pronator radii teres (*a*) through the interosseous membrane at (*c*), and reinserting it at the outer side of the radius at (*d*). At (*e*) the flexor carpi radialis is seen divided. The section at the wrist of the tendons of some of the other muscles arising from the internal condyle is not shown for the sake of clearness. Fig. 3 is a back view of the supinated forearm, showing the altered course of the pronator radii teres (*a*) passing through the interosseous membrane at (*c*), and around the back of the radius to its new insertion (*d*).

The steps of the operation are as follows: Every precaution is taken to secure asepsis, and unless this can certainly be obtained the operation should not be undertaken, as the results of any error as to cleanliness are extremely serious. An incision, three inches in length, is made in the middle of the forearm as for ligature of the radial artery. The inner edge of the supinator longus is rapidly defined, and beneath it the radial artery and nerve. The latter structures are drawn inwards and the distal part of the pronator radii teres is separated from the surrounding muscles and fascia. Its tendon is then removed from the radial attachment, care being taken not to remove the periosteum. The pronator radii teres is then held aside and an opening is made into the interosseous membrane, just internal to the inner border of the flexor longus pollicis, and an aneurism needle is then passed behind the radius from without inwards, and as close to the bone as possible, and a sufficient space is made for the passage of the tendon of the pronator radii teres, and the aneurism needle is left in with its eye toward the ulna. The tendon of the pronator radii teres is then transfixed with silk, of medium thickness, in the form of a Staffordshire knot, and leaving two free ends. The ends are passed through the eye of the aneurism needle, and by traction on it the tendon of the pronator radii teres is brought round the radius. The ends are now utilized in the following way so as to secure the tendon to the bone. They are rethreaded on separate suture needles, and the tendon is grafted thus to the periosteum. One suture

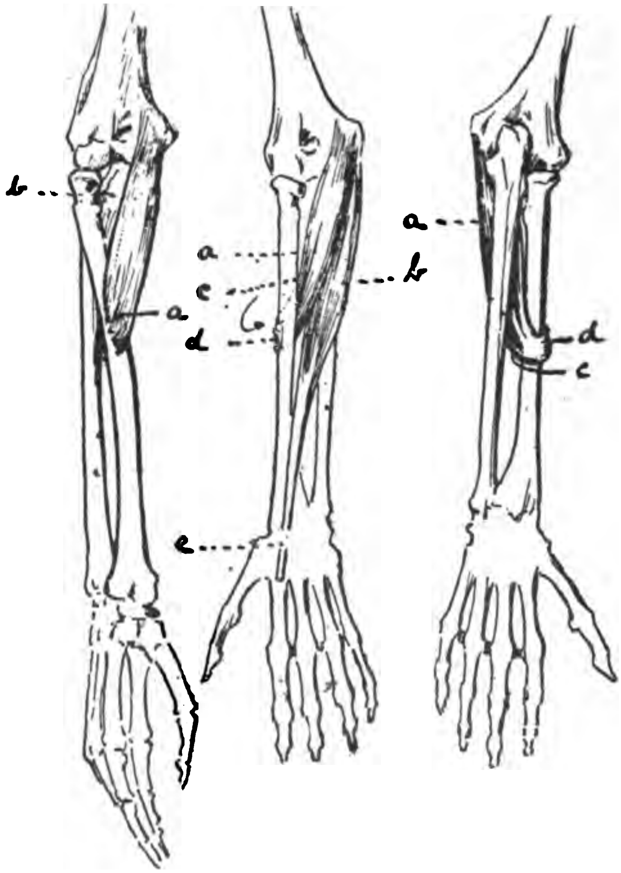

Fig. 1. Fig. 2. Fig. 3.

Fig. 1.—Outline of the bones of the forearm, the radius pronated by the pronator radii teres (*a*). A small portion of the flexor carpi radialis (*b*) is seen.

Fig. 2.—Outline of the bones of the forearm, which is now in supination. The radial insertion of the pronator radii teres (*a*) has been detached from the bone and has been passed through an aperture made in the interosseous membrane at *c*, and passed round the posterior surface of the radius and reinserted on the outer side at *d*. The flexor carpi radialis (*b*) has been divided at *e*.

Fig. 3.—Back view of the supinated forearm. The pronator radii teres (*a*) is seen passing through the interosseous membrane at *c*, and reinserted at *d*.

is passed through the periosteum on the outer side of the radius above the transplanted tendon, and the other passes through below. The two ends are then knotted together over the tendon. But I am disposed to think it is better to work a drill through the bone from before backward, and near the outer surface, and then secure the ends through the aperture. This completes the first part of the operation.

The second part consists in dividing the tendons at the wrist. A transverse incision is made there, the median nerve is defined and protected, and the following tendons are divided: the flexor carpi radialis, the flexor sublimis, palmaris longus, flexor carpi ulnaris, and, if the thumb is strongly flexed and adducted, the flexor longus pollicis. Both wounds are then closed and dressed, and the limb is put up with the elbow extended, the forearm supinated, and with the wrist well flexed for eight days. From this time onward till the sixth week the angle of flexion at the wrist is gradually diminished until it is in a straight position. Here the limb should be maintained while the extensors and supinators are massaged and stimulated with interrupted current, care being taken to control the limb with a splint reaching from the upper arm to the fingers. The arm recovers its use very rapidly indeed.

I have now practised this operation in two cases with great success, and I find that in three months after the operation the patients could use the hands well, and perform such fine movements as picking up a pin. If there is any hesitation on a child's part as to using the limb, it is well to tie up the sound arm, and insist on the child using the recently operated on limb.

NOTES ON THE TREATMENT OF RICKETS IN AN OUT-PATIENT DEPARTMENT.

By E. MANSEL SYMPSON, M.A., M.D.Cantab., M.R.C.S.,
Surgeon to the Lincoln County Hospital.

TWO great principles of out-patient treatment are, I think, simplicity and directness. There is always such an atmosphere of doubt as to whether the directions of the physician or surgeon are carried out away from the hospital, as to whether the medicines and applications prescribed are used rightly or indeed at all, that the simpler the treatment, and the more directly it can be applied to the patient, the more satisfactory the results will be.

Again, I attach great value to taking the parents or friends of the patient into one's confidence, and the easier the methods of treatment are to understand and explain, the more quickly do we gain over to our side an ally or allies, of perhaps not much active good, but one or more whose efforts against us would paralyze our work.

And I believe that these remarks apply particularly to the out-patient treatment of rickets. For patients in the first few years of life, from 1½ to 5 years, my plan of campaign is practically the same for all. For those with heavy bodies and heads, protuberant bellies, head sweats, and commencing or acquired bow-legs or knock-knees, the food supply is carefully attended to, the digestive functions restored as soon as possible, starchy food being limited, fats being recommended, especially bacon fat and dripping, which I believe has for these cases a high nutritive value. For very young children especially the addition of some cream to the dietary is most valuable. Condensed milk, if it be taken, should be replaced by cow's milk boiled, and a weak gravy soup or broth will often help to stop the rickety tendency. For marasmic patients nothing acts so well as a daily rubbing under each axilla of cod liver oil. For all these rachitic patients, then, varying the dose slightly according to age, I prescribed cod liver oil and syrup of the phosphates of iron.

In very hot weather I let the children leave off the oil, but the mixture generally is very well taken, and the results certainly are most satisfactory. In cases with any tuberculous or syphilitic history, the syrup of the iodide of iron should be substituted for that of the phosphates.

Next as to the treatment of the rickety deformities, especially of the leg bones. In the case of patients under the age of 4, even with very marked bowed and bent tibiæ, and some degree of knock-knee, I can assure the parents with great confidence that after nine months' to fifteen months' treatment these deformities will be very greatly improved or altogether remedied. I show them how, if one presses a warm stick of sealing wax at one end on the table, it bends and curves, and I tell them it is much the same with their child's leg bones, which are soft and overweighted with the heavy body and head they have to carry. If I then lay the stick of wax down on the table, they see that no pressure is bending it, and I tell them that is the condition of their child's bones when he is off his feet.

Few things mothers dread for their children more than the thought of an operation, and a good deal of moral pressure can be brought to bear on them to induce the proper carrying out of one's orders by the suggestion that the alternative to your treatment is an operation. I was glad to find the opinion of our President and other members of the Section strongly expressed as to the not remote danger of operating (whether by osteotomy or osteoclasis) on soft bones. In that opinion I thoroughly share, and am prepared to leave any question of operation to a later age—say that of 5 or 6 years. By that time we can see whether ordinary treatment has been able to effect anything, the bones have got harder, and there is less risk of producing the calamitous condition of pseudarthrosis.

These children's legs should be put up in splints, preferably outside ones, which may purposely be made 3 or 4 inches too long. This treatment prevents the patient's walking; or, at any rate, prevents much pressure being exercised on the soft bones. The splints should be taken off once every month or three weeks in the winter, and once a fortnight in the summer. Here again is a good opening for explaining to the mother that we do not want to apply any pressure to the child's legs to straighten them, and that she can generally be taught to replace the splints, if necessary. I do not deny that a rickety child's legs occasionally become much straighter with no treatment whatever. I remember one case of a little girl with very bent tibiæ, whom I wanted to put into splints, especially as her grown up brother looked as if, like the sailor, his feet had been tied under a horse's abdomen. In spite of this object lesson, the parents objected to my keeping the child in splints. Nothing more was done for her at that time. Her diet was rectified, and in a year's time the legs were quite straight. Still I feel sure that the great mass of these rickety children are far better when off their feet—for this reason, that the deformity of the pelvis is so much less apt to occur, as little or no pressure is acting upwards through the acetabula while the child is lying down, or even sitting up. We have in Lincoln a fair number of cases of rickets, not so much from insufficient as from bad feeding and overfeeding of infants.

I have only to thank you for the attention you have given to these notes, the fruit of my experience during the last seven years.

EDITORIAL COMMENTS

Home Modification of Milk

The various formulæ which have recently been published for the more accurate and scientific modification of milk at home, have done much to help the practitioner solve what appeared to him a very intricate problem. The simplest and perhaps most generally used formulæ are those of Dr. W. L. Baner, of this city, which were published in the *New York Medical Journal* for March 12, 1898. He assumes the usual analysis of cow's milk to show approximately: Fat, 4 per cent.; proteids, 4 per cent.; and sugar, 4 per cent. This is in most cases sufficiently accurate for practical purposes. He also assumes that cream will contain proteids and sugar in the same proportions in which they existed in the original milk. As a matter of fact, cream contains rather less proteids and sugar, but the difference is small, and, for practical purposes, may be neglected. We must congratulate Dr. Baner upon the success he has achieved in bringing seemingly so intricate a subject within the reach of all who are not chemists and mathematicians.

However, recently a specimen of cow's milk was sent to our laboratory, by a gentleman in a neighboring city, for analysis. He only stated that he was using the milk in his family, which contained several small children, and that he was anxious to know whether it was suitable for them. It contained: Fat, 7.80 per cent.; proteids, 4.31 per cent.; and sugar, 3.86 per cent. It is obvious that this milk, modified according to the above-mentioned formula, would give far too high a percentage of fat. The reverse is too often true of milk from the grocery. If, then, after modifying the cow's milk, on the assumption that it contains fat, 4 per cent.; sugar, 4 per cent., and proteid, 4 per cent., our results are not such as we had expected them to be, it behooves us to send at least one specimen to some properly equipped laboratory in order to find out whether our assumption was warranted. If the milk should vary much from the average analysis, we can no longer modify it by Dr. Baner's formulæ, but we can make use of the formulæ published in PEDIATRICS for March 1, 1899, which will be found to fit all cases, and are quite simple if one will make an effort to master them. Of course negative values in the equations would show that the combination desired is impossible with the ingredients to be made use of.

It must not be supposed that modification will take the place of sterilization of milk. If the source of milk is doubtful, and the weather is hot, it should be sterilized in addition. Nevertheless it is to be borne in mind that a milk containing the proper proportions is more readily digested and leaves less of a residue to undergo fermentation and putrefaction. T.

Cystitis in Infants

Examination of the current text-books of pediatric practice will show a notable absence of comment upon this topic. The disease is either dismissed with three lines or entirely ignored. Some interesting light has been cast upon one phase of the subject by several recent foreign publications, describing an acute infection of the bladder in infants, due to the bacillus coli communis.

The source of the germ appears to be usually the intestinal tract. After apparent convalescence from an ordinary summer diarrhea, the baby again sickens, with languor, loss of appetite, and a rapid and marked rise of temperature. The trouble may set in with or without chills. Remissions are not usually accentuated. It is the high fever which, as a rule, first attracts the mother's attention. The thoracic organs are found normal, though bronchitis may be co-existent, as a misleading indication of broncho-pneumonia. The pharynx is perfectly clear. The abdomen is soft, the bowels are not much deranged, and, strangely enough, the urine may pass without noticeable discomfort. Deep pressure over the pubes causes distress. The temperature is alarmingly high, at times reaching 105° F. and more, and the pulse is "septic," running late in the disease even to 180 or 190 per minute. The haste of the practitioner and the difficulty in small infants of saving the urine usually cause a urinary analysis to be postponed or forgotten, and the fever runs on a week or even ten days with only a conjectural diagnosis.

Recovery without treatment is precarious. Some unrecognized cases have died of consecutive pyelo-nephritis. If the urine be examined, it is found to contain a heavy trace of albumin, many epithelia, many pus-cells, and numerous clumps of short, thick rods—the bacillus coli. The pus-cells often show extraordinarily distinct nucleation. Casts are absent.

Treatment with irrigation and hydragogue diuretics has proved gratifying and prompt. In a recent case in this city (a boy of 4 months) ¼ per cent. lysol irrigations were used, with large draughts of weak lemonade and tea by the mouth, and small doses of sodium benzoate and urotropin. Improvement was speedy and recovery complete within a few days from the beginning of the treatment, though the disease was not recognized until a consultant was called on the eighth day, and the baby's condition was then alarming. It is believed that as soon as urinary analysis in babies is more systematically made, "coli" cystitis will be found more frequent than has been suspected, and many cases of conjectural "typhoid" and "broncho-pneumonia" in sucklings will be referred to a cause heretofore overlooked. B.

CORRESPONDENCE

DOUBLE EMPYEMA.

"To get rid of pus, we require surgical interference, as a rule. Pulmonary aspiration does sometimes lead to absolute cure, as in a case the speaker saw recently, where the parents objected to operation. There are cases also where operation cannot be performed. Thus, in a case now in the Brompton Hospital, after operation, a second empyema developed on the other side. This is doing well under repeated aspiration."

The above is taken from an abstract of the discussion on the Treatment of Pleural Effusion in Children before the Section on Diseases of Children—British Medical Association (PEDIATRICS, pp. 268, 269, September 15, 1899).

It is somewhat surprising that no objection was made to the statement that operation cannot be performed when the process is bilateral, the speaker, Dr. Maguire, advocating repeated aspiration.

In the transactions of the American Pediatric Society for 1889, the writer reported two cases of double empyema, recovery following the operation of incision and drainage. Since then he has reported another successful case, in the practice of Drs. Burgman and Holmes.

A fourth case—one neglected and not seen until marked sepsis existed, terminated fatally.

In English, American, and German medical literature quite a number of cases of double empyema, operated upon successfully, have been reported.

In a number simple incision and drainage was resorted to; in others the ribs have been resected.

Some have incised both sides at once; the majority, however, favor delaying the operation on the second side for a few days.

. . .

Experience therefore shows that cases of bilateral empyema are to be treated surgically. Our treatment should be radical and not palliative.

F. HUBER.

ABSTRACTS

COLLECTIVE REPORTS ON GLYCERINIZED VACCINE LYMPH.

Albert C. Barnes (*American Gynecological and Obstetrical Journal*, September, 1899) makes the following report:

The recent widespread epidemic of small-pox in the United States has necessitated general vaccination, which has afforded excellent opportunities to determine the exact, actual, and comparative value of glycerinized vaccine.

For the past ten months I have been collecting reports from various infected districts, in an effort to ascertain not only the actual value of glycerinized vaccine as a protective against small-pox, but its relative value compared with vaccine points, quills, crusts, and the older methods of producing vaccination.

Other objects to be determined were (1) the value of glycerinized vaccine as a preventive of small-pox; (2) the proportion of successful "takes" in both primary and secondary vaccinations; (3) the relative frequency of complications, such as diffuse inflammation of the vaccinated area—cellulitis, lymphangeitis, lymphadenitis, ulcerations, abscesses, etc., which so often follow the use of vaccine points.

The methods of inquiry adopted by this investigation, were by circular letter, and personal inquiry, by large numbers of physicians throughout the country.

In a certain number of cases where wholesale vaccination was practiced, as for instance by health authorities, exact figures could not, for various reasons, be obtained. However, in such instances the reports were conservative and were none the less illustrative and convincing.

In Baltimore, where for several months there has been a number of cases of small-pox, there were employed by the health authorities and physicians in private practice considerable over 100,000 tubes of glycerinized vaccine. Those vaccinated were periodically observed until the success or failure of the vaccination was determined. In not a single instance did small-pox occur in a person vaccinated with glycerinized lymph. Conservative estimate places the number of successful "takes" at 95 per cent. in primary cases. The vesicles in most cases were typical and uncomplicated with staphylococcic and streptococcic infection. The number of excessively sore arms did not exceed 1 per cent. of the total number vaccinated.

In Minneapolis, in one series of 3,045 vaccinations with glycerinized lymph there were 29 failures, all of which were in secondary cases, *i.e.*, those who had been previously vaccinated. In the same city a second series of 3,875 vaccinations resulted in 4 failures in primary cases, and in 51 failures in secondary cases. All the data collected from Minneapolis show a proportion of 95 per cent. successful "takes" in primary cases and 75 per cent. in secondary cases.

Cleveland records show that widespread vaccination was practiced. Both glycerinized vaccine and points were employed at the beginning until results proved the vast superiority of the glycerinized lymph, when points were almost entirely abandoned.

In one series of 20,000 cases vaccinated with the glycerinized product there was an average of over 90 per cent. successful takes. Septic complications were almost entirely absent.

In Richmond, Norfolk, and Portsmouth, Va., no accurate records were kept of results obtained, but in these three cities there were employed about 120,000 tubes of glycerinized lymph. Extensive inquiry concerning results obtained, place the number of successful "takes" over 90 per cent. In these cities the superiority of the glycerinized lymph over the points, in producing successful vaccinations and avoiding septic complications, were everywhere noted. The experience of the health authorities and physicians in private practice in Norfolk, is particularly valuable. At the beginning of the small-pox outbreak, the vaccine points of a standard make, were employed extensively. In a large number of cases, small-pox in a virulent form occurred among patients who had been vaccinated with points. This shows that the inflammatory reaction which took place at the site of vaccination was due to staphylococcic infection, and was not true vaccination.

From Philadelphia, Indianapolis, Chicago, Gloucester Co., Va., Pittsburg, Allegheny, Standwood, Ia., Lisbon, Ia., and over forty small towns throughout the country, responses to inquiry show that while no accurate records were kept, the glycerinized vaccine, in comparison with points, had proved so superior in producing successful vaccinations (averages from 80 to 95 per cent.) and in affording freedom from septic complications, that points had been largely abandoned in those places in which comparative tests had been made.

In Porto Rico, under the supervision of Dr. George C. Groff, Major and Brigade-Surgeon, U.S.A., extensive vaccination was practiced. Vaccine points in this climate failed entirely, while glycerinated vaccine yielded about 90 per cent. of successful vaccinations.

Dr. R. T. Hammond, Jessup, Md., had vaccinated 236 patients with glycerinized lymph, and had but one failure; no excessively sore arms resulted.

A series of 70 vaccinations in private practice in Indianapolis, with glycerinized lymph, showed successful "takes" in all but one case. No septic complications,

Dr. F. V. Ely, Pittsburg, secured 36 successful "takes" in a series of 40 vaccinations with glycerinized lymph. This is remarkable, inasmuch as at least one-third of these cases were secondaries.

Dr. F. A. Crosby, Beach Ridge, N.Y., reports 100 per cent. successful vaccinations with glycerinized lymph in a series of 60 cases. Sore arms were not noted.

Dr. C. G Rusk. Baltimore, vaccinated 360 persons with glycerinized lymph, and obtained a successful "take" in every instance.

Dr. C. T. Mattefeldt, Cantonville, Md., employed glycerinized vaccine in a series of 157 cases, 20 per cent. of which were secondaries; 155 successful vaccinations resulted.

Dr. D. W. Dodson, Nanticoke, Pa., reports that in a series of 250 cases, he secured 100 per cent. successful vaccinations with glycerinized lymph.

Dr. J. R. Faust, Mann's Choice, Pa., vaccinated 130 school children and teachers, every one of which was successful.

Dr. A. J. Taylor, member of Board of Health, Caribou, Maine, reports 200 primary vaccinations, with 30 failures; of the latter, 27 were vaccinated, with 14 successful "takes." This experience shows the value of revaccination in those cases in which successful results did not follow first vaccination. The average in this series of cases was over 90 per cent. successful "takes."

Dr. W. F, Beyer, Punxsutawney, Pa., vaccinated 300 cases, *primary and secondary*, and secured 98 per cent. successful "takes,"—in other words there were but six failures.

A large number of other private reports show that glycerinized lymph yielded from 90 to 100 per cent. of successful "takes" in primary cases, and from 60 to 75 per cent. in secondaries.

Conclusions.—This investigation proves conclusively that the recommendation of the United States Marine Hospital Service that "glycerinized vaccine only should be employed" ("Public Health Reports," January 9, 1899) is well substantiated by experience, because:

1. Properly prepared glycerinized vaccine is pure and free from staphylococci, streptococci, and other pathogenic organisms which are invariably found (Copeman, Crookshank, Pfeiffer, Reed, U.S.A.) on vaccine points.

2. Glycerinized vaccine affords absolute protection against small-pox; vaccine points are uncertain in this regard.

3. Vaccination with the glycerinized products does not cause excessive inflammation of the vaccinated area. Cellulitis and inflammation of the lymph vessels and glands amounting at times to abscess formation is not an infrequent sequence of the use of vaccine points.

4. Vaccine points are apt to lead to a false sense of security, inasmuch as they induce a local staphylococcic or streptococcic infection, which is entirely distinct from true vaccination. Such a result is not protective against small-pox.

5. A high estimate of successful "takes" from vaccine points is, by these and numerous other reports, shown to be not over 60 per cent. in primary cases, and a much lower percentage in secondary cases.

6. Glycerinized vaccine has been officially adopted by the governments and health authorities of the United States, Great Britain, Germany, France, Russia and Belgium. It should be universally adopted in private practice.

A STUDY OF STOMACH DIGESTION IN INFANTS.

H. Wolf and J. Friedjung (*Archiv für Kinderheilkunde*, 1898, xxv., 3 and 4) undertook to study the capabilities of the infantile stomach in the various diseases of this organ as compared with the healthy stomach. For this purpose the stomach was washed out and the contents examined in various ways. The fluid obtained was measured, its macroscopic appearance described, and then studied from the following points of view: (1) reaction; (2) free acid—congo-paper; (3) muriatic acid—Günzburg's method; (4) lactic acid—Uffelmann's method; (5) total acidity—titration with one-tenth normal potash lye; (6) pepsin—fibrin test; (7) labenzym—Boas' method; (8) butyric acid—chloride of calcium test; (9) acetic acid—chloride of iron test; (10) amylum; (11) residual products of the digestion of albumin.

1.—Acute dyspepsia; thirty-two cases. The reaction was nearly always acid, in no case alkaline, even when bile was present. One-half of the cases presented free acid, but only two free muriatic acid, independent of the digestive act. Labenzym was freely present in eleven cases, the age of the child playing no rôle in this connection; it was, however, always accompanied by an acid reaction. Pepsin could be demonstrated in quantities in thirteen cases, in five cases labenzym was present at the same time. Lactic acid was altogether absent in ten cases.

2.—Gastro-enterocatarrhus acutus; thirty-seven cases. A neutral reaction was frequently met with, free muriatic acid rarely. Lactic acid was absent in over one-half the cases. This stands in a certain relation to the amount of muriatic acid present, increasing abruptly at the beginning of digestion, reaching its height one hour after feeding, and then gradually decreasing. After its absorption, only muriatic acid makes its appearance. The frequent absence of lactic acid is referred to the quality of the food. The test for labenzym was perfect in eighteen cases in every stage of the digestion, and in all stages, independent of the acid reaction. In twelve cases sufficient pepsin was present, which could not be demonstrated as depending on the reaction.

3.—Enteritis follicularis; three cases. A strong acid reaction was present in every case, the total acidity was high, free muriatic acid was absent, lactic acid always present, in no case labenzym. One case showed the presence of pepsin.

4.—Cholera infantum; five cases. An acid reaction was obtained where lactic acid could be demonstrated; free muriatic acid was absent. This, also, should not be considered typical, as the presence of free muriatic acid was easily demonstrated in a later examination. In three cases labenzym was present, in the empty as well as in the full stomach. In four pepsin was present.

5.—Chronic diseases of the digestion. Twenty-five cases: nine contained free acid, among these four contained free muriatic acid. In twelve cases sufficient labenzym was present; in eight sufficient pepsin. A favoring factor for the positive findings could not be discovered.

6.—Healthy infants; four cases. The contents of the fasting stomach (three hours after the last meal) were neutral and the findings negative in all directions. During digestion the reaction was acid, due to the presence of lactic acid. No free muriatic acid, labenzym, nor pepsin was present here. This goes to prove that the secretion of the "normal" digestive ferment is subject to great variations.

The authors have come to the following conclusions:

1.—Stomach digestion in infancy seems to be of subordinate importance for the assimilation of food.

2.—We are unable to draw any positive conclusions as to the digestive function of the infant from the absence or presence of the normal products of secretion in the stomach.

3.—The condition of the secretion of the stomach does not furnish us with a characteristic picture in the various digestive disturbances of the infant.

4.—As positively pathological signs, only the motor insufficiency accompanied by lactic acid fermentation, extending beyond the time of normal digestion, and perhaps also the presence of volatile fatty acids, should be regarded. The authors in conclusion warn against the careless prescribing of muriatic acid, which is not even sufficiently justified, when it is based on the analyses of a test meal, without taking into consideration the other clinical symptoms.

PERICARDITIS IN CHILDHOOD.

A. Baginsky (*Klinisch-therapeutische Wochenschrift*, 1898, v., 1620) presented a resumé of this affection, which is usually undervalued as to its frequency and dangers in childhood, at the Berliner Medic. Gesellschaft (Oct. 26, 1898).

Pericarditis is a disease of very frequent occurrence in childhood. Baginsky has thus far seen sixty-four cases in the Kaiser und Kaiserin Friedrich Kraukenhaus. Among these, twenty-four cases presented at the same time a polyarthritis, eleven were tuberculous, eleven had pleuropneumonia, seven were also suffering with erysipelas and phlegmon, six with purulent pleuritis, five with serious forms of diarrhea, in six cases measles were the cause, pneumonia going hand in hand with these; in three cases an autochthonous endocarditis was present; meningitis, otitis media purulenta, and diphtheria were besides recognized as a factor in the disease. It should also be emphasized that grave forms of infectious diseases, especially scarlatina, may also present quite an accumulation of fluid within the pericardium, which should not be classed with pericarditis, however, but which is obviously caused by septic processes. Baginsky points out that rheumatic diseases are met with in children much more frequently than is usually supposed. There were, for example, 145 cases of polyarthritis rheumatica observed this year at the Krankenhaus, associated in part with chorea, partly occurring without it. The serous, fibrinous, hemorrhagic, and purulent forms of pericarditis are also met with in children.

Of the serous form only sixteen cases were observed, which attacked children from 2¾ to 13 years of age. It usually ushered in with quite violent and grave symptoms. The fever was quite high (cases were observed which registered a temperature of 41°C.; fever is generally of an irregular type, changing, with violent exacerbations and temporary remissions); the facial expression is one of intense suffering, pain (especially intense when polyarthritis is also present) is, as a rule, violent; the respiration frequently extraordinarily accelerated (occasionally accompanied by violent cough); the pulse may be quite strong, but is at times very feeble, hardly to be recognized, reaching 120 to 150 beats and over, occasionally arhythmic, but at times quite regular.

The difficulties of diagnosis are frequently very great, especially as the percussion of the heart in childhood is still variously interpreted. This is due to the peculiar construction of the child's thorax, which is extremely elastic. Minute variations as regards the percussion stroke may lead to quite marked differences as to the size and position of the heart and its outlines. In answering the question, what form does the outline of dullness take in a serous exudation of a larger or medium size in the pericarditis of children, we must, in the first instance, have an idea what figure the pericardium of the child presents in health and the position of the heart.

It is universally admitted that the child's thorax is supplied, on the whole, with more horizontally placed ribs, that the diaphragm is hence situated somewhat higher, and that, therefore, the heart is placed somewhat higher than in the adult. This high position of the diaphragm leads undoubtedly also to the fact that the heart in the child is situated more horizontally than in the adult. As a result, the cardiac impulse is, as a rule, especially in very young children, naturally situated somewhat to the outside of the mammillary line. The horizontal position also causes the heart to rest on the diaphragm, and, as the liver is somewhat longer in young children than in the adult, the heart naturally rests more upon the liver; the cardiac dullness very readily merges into the liver dullness. This, where an accumulation of food is present, changes the conditions somewhat, as compared with the adult. Stress has always been laid on the triangular figure of dullness, which, as we know, presents in such a manner that one of the limbs lies toward the right outside of the sternal line, and this triangular form has always been accepted as the true outline of dullness of the pericardium. The idea has furthermore gained ground that the heart floats, so to speak, in the pericardial fluid. As a general thing this may be true, but no great dislocation occurs in the different positions assumed by the child, but only a very slight one which may in all probability be referred to the horizontal position of the heart, and its support on the diaphragm. Baginsky attempted by experiment or by injections into the pericardium to demonstrate the configuration of the latter. In an injected pericardium of an older child it was seen, for example, that the fluid accumulated especially below and to the right side, and we may perhaps thus explain why the border of dullness becomes somewhat larger on the right side. The same could be observed in a smaller heart, treated in the same manner, and it could be seen how the fluid accumulated below somewhat, but more behind and to the right. If these, therefore, are the physical conditions present in serous pericarditis of children, we must bear in mind in the diagnosis that this enlargement of the cardiac dullness and a certain change in the position of the heart is only a relative indication of the presence of a pericardial exudation. We are still unable to exclude with certainty the presence of dilatation at the same time, which may also be a partial cause of the enlargement. The most important factor for diagnosis will, however, be found in auscultating the cardiac sounds. A peculiar whistling sound has been considered of value; this is said to be present over the apex of the heart in children, and Rosenbach, particularly, has pointed out that a whistling sound is frequently heard over the apex, which he considers endocardial and not pericardial, and which seems in many ways to have an endocardial character.

Although the diagnosis of a serous exudation may frequently be quite difficult, this is even more so in purulent exudation. The latter is, as a rule, quite small, so that we shall have to study the accompanying symptoms very closely.

Baginsky met with pericarditis purulenta in phlegmonous erysipelas, grave forms of angina, caries of the ribs, fibrinous pneumonia, bronchopneumonia, gastro-enteritis, furunculosis, phlegmon of the throat, empyema. Grave affections are therefore most prominent here, and the disease picture is governed by the general symptoms. Extraordinary fatigue, long-continued pyemic fever with sudden exacerbations, general cachexia, point to some malignant cause. The disease occasionally makes its appearance at an early age; thus, Baginsky lost a child ten days old with a purulent pericarditis, also one child two years, and two three years of age. The bacteriological findings are the bacterium coli, strepto- and staphylo-coccus, and in isolated cases the bacillus pyocyaneus.

Tuberculous pericarditis does not really occur very frequently in tuberculosis; if it does, however, it occurs as a very malignant affection. Baginsky presented the heart from a case where a pericarditis tuberculosa was present accompanied by an extraordinarily extensive cheesy pneumonia of the upper parts of the lungs; there was present a colossal thickening of the pericardium, extensive adhesions of the pericardium with the heart, purulent collections between both, and, finally, an extensive tuberculous deposit in the pericardium. Baginsky observed, on the whole, eleven cases of this kind. Those forms which are complicated with polyarthritis rheumatica remain the most important. This form in children very early involves the heart. It is even claimed by some that a child which has contracted polyarthritis rheumatica will nearly always suffer from involvement of the heart. These children, besides the febrile condition, will early present an enlargement of the cardiac area of dullness; irregular and interrupted dull sounds and murmurs of an endocardial nature. To these pericardial symptoms will be added, for example, friction sounds over the heart, and in this manner the onslaught may exist for a period and then gradually disappear. In a certain number of cases, however, the heart will not again resume its normal size; an enlargement is left behind which may increase and decrease, so that some fluid is undoubtedly present or a dilatation has already taken place. The diagnosis is, as a rule, difficult. If a second attack of rheumatism should occur within one-half to one year, we shall have a repetition of the same process. The child may succumb to the second attack with the symptoms of extreme dyspnea, a colossal enlargement of the cardiac area of dullness and all symptoms of congestion; enlargement of the liver, hydrops, enlargement of the veins of the neck. A venous pulse may occur, and section will then disclose some interesting conditions. Baginsky demonstrated the heart of a 13-year-old child which was completely adherent to the pericardium and was of colossal dimensions. Other hearts which were presented showed the same conditions. This form of heart disease runs a perfectly typical course, which is quite malignant, the heart being totally deprived of its functions. When a child is attacked at an early age with polyarthritis rheumatica and early suffers a relapse, we can hardly expect a permanent cure. Baginsky found that these children usually succumbed at the time of puberty. Salicylic acid has no action whatever in these forms of peri- and endocarditis, nor is any other drug more useful. We may, however, at the time when pericarditis is developing, where endocardial symptoms also occur, and symptoms of congestion are present, obtain some astonishing results from digitalis and diuretin (the latter four or five times daily). As soon as diuresis is established, the patient is markedly relieved for days or even weeks.

PEMPHIGUS NEONATORUM.

Luithlen (*Wiener klinische Wochenschrift*, 1899, xii., 69) says that pemphigus neonatorum is contagious, according to clinical experience, the contents of the bullæ are inoculable; they furthermore also contain the staphylococcus aureus, which, when inoculated into the human skin, gives rise to bullæ analogous to those found in children in this disease; in the histological examination of the intact bullæ the presence of staphylococci can also be demonstrated in their contents. The disease when compared to pemphigus of the adult is relatively benign. It is to be differentiated from pemphigus syphiliticus, bullous eczema, herpes tonsurans, dermatitis exfoliativa, the septic exanthemata of the new-born, especially the forms designated as pemphigus gangrenosus, and pemphigus periumbilicalis. It may also be mistaken for burns. Therapeutic measures, aside from the avoidance baths, consist in application of ointments, the best of which is one of ichthyol, after the bullæ have been removed, the rest of the body is then to be powdered with a slightly disinfecting dusting powder.

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ORIGINAL ARTICLES*

A CONTRIBUTION TO THE STUDY OF CARDIAC OVERSTRAIN IN THE YOUNG.

By F. J. POYNTON, M.D.,

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IN bringing forward these observations, I feel that they are too few in number to furnish definite conclusions. But the question of heart strain being one of considerable and increasing interest, and a subject about which it is difficult to get accurate data, I have ventured to put these few results upon record as a small addition to the literature of the subject. In 1871 the observations of Da Costa upon the irritable heart in soldiers aroused considerable interest; and quite recently Professor Clifford Allbutt, in an authoritative article in his "System of Medicine," has dealt with this and allied subjects, and has called attention to the interesting observations of Dr. M'Carthey. Two of the greatest difficulties in estimating the effect of prolonged and severe exertion upon the heart are, I suppose, the following: In the first place, when an individual presents himself with symptoms, it is almost impossible to gauge at all accurately the actual part taken by the muscular exertion; and secondly when, as may be the case, there is no definite valvular lesion, the examination of the heart may afford little assistance, and the disorder of its mechanism requires to be estimated by symptoms which are sometimes very obscure. There will, I think, be a tendency for those who are not athletes to take an alarmist view, and those who are athletes to underrate the dangers. It is difficult not to feel convinced that a certain number of "picked men" must do themselves needless harm in these days in which there is so much competitive athleticism, and that an accurate knowledge —clinical, one can scarcely term it—of the steps by which the damage is brought about would be of very great interest to those who have to advise upon such questions.

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The subjoined tracings illustrate the method described in detail in the paper. Both tracings were taken from the same individual; No. 1 on February 6th, and No. 2 on April 6, 1898.

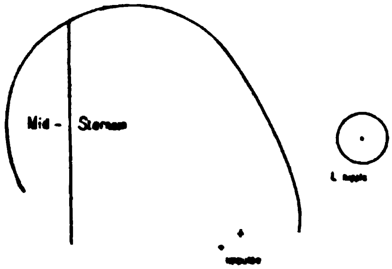


Diagram I.—Aged 17 years 6 months. February 6 1898.

At the examination the pulse was 72; physique good; no unusual feature noted upon examination of the heart.

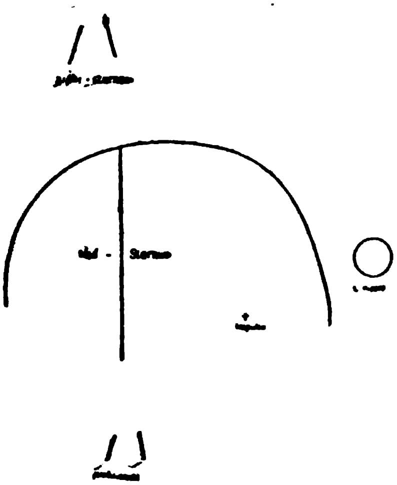


Diagram II.—Aged 17 years 8 months. April 6. 1898.

The examination took place on the day after the final heats of the races in which he had taken a prominent and successful part. The following is the list of events in which he had competed: One Hundred and Two Hundred Yards, Quarter and Half-Mile, Hurdles, Steeplechase, and Long Jump. The area was increased to right, and slightly upward and to the left. Pulse 74. General health quite good, and looking perfectly well. In spite of the active part taken in the races, it is of interest that there was no tendency to tachycardia.

I am indebted to my friend Dr. Penny, the medical officer to Marlborough College, for permission to make my observations under conditions which avoided those ethical difficulties which are apt to occur when observations are made upon the healthy. The method that I adopted was one which I have already used extensively when investigating with Dr. Lees dilatation of the heart in rheumatic fever. The subject lies upon the back with the left arm slightly abducted, and the deep cardiac dullness is percussed and marked out upon the chest with a dermatographical pencil. The position of the impulse is noted, and any murmur or accentuation of sounds is also recorded, and the result transferred to tracing paper. This paper is then named and dated after the following landmarks have been made: The left nipple, the mid-sternal line and the xiphisternal notch. Finally the pulse rate and any peculiarities of the heart or general physique are registered upon this paper, which is then preserved as a permanent record.

Observations can be repeated in a precisely similar manner, and quite independently the one of the other. It is clear that a great many of them are required, for cardiac percussion, especially of the deep dullness, is looked upon with great suspicion. I believe with practice and care it leads to results which are sufficiently accurate, and it is desirable in such an inquiry as this to make use of every means of physical examination. The foot races at Marlborough College are held in the Lent term, shortly before the school breaks up, and a more or less rough training is done for them by the likely competitors. On February 5 and 6, 1898, that is early in the term, I examined by this method fifteen boys who were likely athletes, and upon April 6th, a day after the final heats, I repeated these observations. In nine out of fifteen I was fortunate enough to get a second series of observations, to which were added notes of the amount of training that had been done, and the races, both trials and finals, in which they had taken part. I also made observations of the same character upon two young adults before and after foot races.

As already stated, these observations are too few to permit definite conclusions being drawn, but an extended series would be, I believe, of value in investigating this question of cardiac overstrain. Though several of the boys ran in a considerable number of races, it was interesting to find that the day afterwards, beyond a trifling increase in the pulse rate, there was not the slightest indication of tachycardia. Even in this series there are indications of an enlargement of the heart to the right and upward and to the left in the region of the infundibulum of the right ventricle. In one case a systolic murmur internal to the nipple was present in February and unchanged in April, but a basal systolic murmur present on the first occasion had disappeared on the second. The ages of these boys varied from 14 to 18.

It is not, I am aware, at this time of life that heart strain will be most clearly manifested. It will be found more certainly in those athletes who are passing their prime, who by force of circumstances are unable to maintain the necessary training, and who have already a past history of severe physical exercise. This no doubt will be the time at which a series of accurate observations will throw most light upon the gradual development of pathological results. Nevertheless, though in the earlier years any positive results may be few, their discovery would be of great importance, and negative results are also of some value.

The question of cardiac overstrain in the young naturally leads to the subject of athletics at our large schools. From a practical acquaintance with most of the well-known games I would venture to say a few words upon this subject, for there seems to be, even among authorities upon diseases of the heart, a lack of precise knowledge upon the exertion value of the various athletic pursuits. Thus I have known a weakly boy with a feeble heart forbidden to play cricket and football but allowed to play racquets. Again, one of our greatest authorities upon these questions, writing of lawn tennis and hockey, alludes to them as girls' games, to which the more weakly men will be drawn by a process of natural selection, giving, in my opinion, an erroneous idea of the exertion value of these games, and especially of the latter. There are certain conditions—for example, organic heart disease in a rheumatic boy—which preclude any participation in the violent games of our schools; in other cases it is customary to curtail rather than stop all exercises, and it is in these cases that care is needed. Perhaps only those who have had that particular education can thoroughly realize how prominent a part athletics take in the life of a public school boy. It is, therefore, a serious step to interfere with a boy's athletics, and the more so because those medical men who have had the greatest experience of them tell us that palpitation, cardiac arrhythmia and discomfort are liable to occur at these ages in connection with puberty, when it is especially important they should if possible take pait in all healthy pursuits. Again, though the masters at large schools have no accurate knowledge of the mechanism of the heart, no class of men have a more accurate knowledge than they of the exertion value of our usual school games. If, then, it is thought necessary to curtail a boy's athletics, it is highly needful to be consistent in so doing.

Running, rowing, cycling and all sports which are indulged in competitively have all the common drawback that the individual is tempted to better his best, for he is practically certain to meet his equal if not superior on many occasions. There is not only the continued severe exertion, but the danger dependent upon this competitive element. The reality of the danger of this strain upon a weakened heart is well known, and the following case gives point to the fact:

A young, strong man, aged 26, had been out of sorts for a week, and went for the first row of the season in a four-oar to shake off the *malaise*. On landing he felt ext emely ill, vomited and consulted a doctor. The doctor found that his heart was acting at the rate of 180–200 per minute, and he was admitted to St. Mary's Hospital in this condition. He died a few days afterwards. The tachycardia persisted to the end, and at the autopsy I found evidence of previous pericarditis and mitral valvulitis.

Both Rugby and Association football are violent games, not only because of the running that is required, but on account of the "tackling." Thus in the Rugby game a light player running at considerable speed may be compelled to collar a heavier player moving in the opposite direction. The result is a considerable and sudden strain, which, as Professor Clifford Allbutt has pointed out, is liable to especially damage the aortic area of the heart. For a very striking example of the truth of this assertion I am indebted to Dr. Lees, with whom I saw the following case at St. Mary's Hospital:

A powerful, healthy coastguardsman between 40 and 50 years of age, was in the habit of playing football every Saturday. After a game in the afternoon he returned home, and in the evening thought he heard a steamer. He got up and went out of the house to find her whereabouts, but unfortunately the sound that he had heard was not a steamer, but his ruptured aortic valve which had attracted his attention. When we saw him in the hospital he had well-marked aortic regurgitation and a murmur that could be heard at the bedside.

A more deplorable case than this can, I think, hardly be imagined. I cannot agree that hockey is a "girl's game." Fast it undoubtedly is, in fact one of the fastest of our winter games and by no means devoid of danger. It owes its popularity in part to the fact that "tackling" and "charging" are not allowed, and that sudden strain which is so trying is thus avoided. It is eminently suited to athletes who are unable to get sufficient training to keep their muscles ready for the quick response required for sudden wrenches, but the pace of the game renders it unfit for the weakly boy. Racquets is probably the most trying of all these games. Not only is the exertion continuous and great and the game played in a covered court, but the muscle response, technically known as "the eye," must be extremely rapid and accurate. For this latter quality, I should suppose, it is needful to have a perfect circulatory adjustment, if one may judge from the mental and bodily tremor that is frequent with feeble and dilated hearts. Fives also, if played at all well, involves great exertion, and boxing for a boy with a weak heart is, of course, quite out of the question.

Cricket as an exercise has far more varied qualities, and the ages of many of our best cricketers are proof that it is not among the most trying of athletic pursuits. The regular action of a slow bowler differs but little I imagine from some of our medical exercises, while the strain of fast bowling is best attested to by the fact that every year boys are completely spoiled as bowlers by this over exertion. Finally gymnastic exercises at public schools differ in their exertion value from the most gentle and graduated muscular movements to the superhuman efforts required to climb a rope hand over hand.

In conclusion, though in certain cases games are absolutely contraindicated, and the duty of the medical man is clear, it must always be a most difficult undertaking to attempt simply to curtail them. There are few, if any, of the regular games that do not involve considerable exertion, unless the doubtful advice is given to the boy to play them badly. To cut off certain games at random, with a vague notion of their exertion value is, I think, either harmful or useless.

A SUCCESSFUL CASE OF SPLENECTOMY FOR RUPTURE.

By George Heaton, M.A., M.B., F.R.C.S.,
Surgeon to the Birmingham General Hospital, and the Midland Counties Hospital for Sick Children.

I HAVE ventured to bring this paper on a case of splenectomy for rupture of the spleen before this Section, partly owing to the great rarity of the case, and partly because the blood changes which were observed most carefully after removal of the organ help to throw some light on the probable functions of the spleen.

The accident occurred in a small boy of nine years, which must be my excuse for bringing it forward in the Section devoted to diseases of children.

I will first of all read a short clinical abstract of the case:

CLINICAL HISTORY.

W. R., a boy, aged nine years, was admitted into the general hospital at 6.15 P.M., on December 2, 1898, suffering from abdominal injuries, the result of being run over. His history was that at 5.30 P.M. that day as he was crossing the road he was knocked down by a heavy cart. The wheel of the vehicle went over his abdomen, and he was picked up and carried to the hospital.

On admission he was in a semi-conscious state. His face was pale and his body generally blanched; pulse 130, small; respirations 30, shallow. There was no external wound, but some bruising of the skin over the lower ribs on the left side. He complained of much abdominal pain across the umbilicus. There was some dullness in the left flank which rapidly increased in area, and soon after admission the whole of the lower part or the abdomen became dull on percussion, and showed signs of free fluid in it.

He rallied somewhat after admission, and his pulse fell to 84, but an hour or so afterwards his condition changed for the worse; he became more and more blanched; his pulse increased in frequency; he became very restless, and tossed about the bed complaining of pain.

A diagnosis of severe intra-abdominal hemorrhage, probably from a rupture of the liver or of the spleen was made. As his condition was getting worse rapidly, I decided at once to open the abdomen and not to wait in the hope of his rallying so as better to stand an operation.

OPERATION.

Abdominal section was performed at 11 P.M., five hours and a half after the accident. A median incision was made between the ensiform cartilage and the umbilicus. On exposing the peritoneum it was of a purple-black color, and on opening it a large quantity of dark fluid blood escaped. There was no free gas, and no intestinal contents in the peritoneum. The hand was rapidly passed up towards the liver and that organ examined. It was found uninjured. On passing the fingers towards the spleen they encountered a mass of soft blood clot, and the hemorrhage became alarming. The abdominal wound was rapidly enlarged, and the clots turned out from the splenic area and that organ sought for. A small part was eventually found attached to the gastro-splenic omentum, and proved to be about one-third of the entire organ. The remainder of the spleen had been completely torn away, pulped, and lay in little bits free of the abdominal cavity. The bleeding from the torn splenic vessels was furious, and was only stopped by applying large pressure forceps.

The boy's condition was by this time almost hopeless. He was pulseless, and the respiration was merely an occasional slow, shallow sigh. On ligaturing the pedicle, however, and removing the remnant of the lacerated organ a pulse again appeared at the wrist. Saline fluid was infused into the median basilic vein and strychnine was injected hypodermically. It was quite impossible to search for the remaining fragments of the spleen or to attempt to cleanse the abdomen of blood clot. Before closing the abdomen a large *submortem* intussusception of the splenic flexure of the colon was exposed and reduced. The wound was closed with salmon-gut sutures and the patient hurriedly put back to bed. His pulse was then 180 and his respiration 36.

He was given strychnine injections every three hours during the night and a small morphine injection at 1 A.M. He vomited at frequent intervals at night and was extremely restless. At 9 A.M., December 3d, his temperature was 96, his pulse 160, running. Twelve ounces of saline fluid were injected subcutaneously into the side of the chest, and he was given enemata of milk, beef tea, and brandy. He was very restless all day and vomited several times.

On December 4th his condition had somewhat improved. His pulse fell from 160 to 120 during the day. His temperature remained between 100° and 99°. During the afternoon his restlessness increased and he twice tore all the bandages off the abdominal wound. The abdomen became distended. A large purgative enema was given which was followed by an action of the bowels. This relieved the distension somewhat and he became a little quieter.

On December 5th he was given a draught containing strychnine and digitalis, and occasionally morphine subcutaneously to prevent his extreme restlessness. When awake he complained of pain in the left side of the chest on breathing. Some weak friction sounds were audible over the lower part of the left lung. The vomiting ceased and he was able to take nourishment by the mouth. He complained of intense thirst.

AFTER-PROGRESS.

He convalesced very slowly. The vomiting ceased and did not return, and the bowels gave no trouble, reacting always to simple enemata. The temperature remained persistently raised, varying from between 100° and 99° for nine days. On the tenth and following days it became more hectic and at the same time he became considerably worse. He was extremely cross and peevish, his appetite very small and capricious and he rapidly emaciated. This feverishness attained its height on December 17th and 18th—that is to say, on the fifteenth and sixteenth days after the injury. His temperature then ranged between 102° and 100°. He seemed to become even more anemic and weak every day, and his blood showed an enormous excess of leucocytes (60,000 per c.mm). After this he gradually improved, and by December 28th his temperature was normal, though occasionally it was raised at night for some weeks afterwards. His pulse during all this time remained rapid, varying from 110 to 120, and his respiration varied from 32 to 36.

The cough and pain in the left side were followed by dullness in the lower half of the left lung with weakness of the breath sounds over that area and œgophony. An exploring needle was inserted on December 12th, but only a little blood drawn out. The dullness afterwards slowly disappeared, and was replaced by a resonant note, while the normal area of splenic dullness was replaced by a tympanic note due to the stomach.

There was some slight enlargement of the lymphatic glands, particularly of the inguinal glands and of the cervical glands of the left side of the neck. These became largest about the first week in January, and since then have become much smaller.

The wound was dressed on December 5th, as the patient had torn all the dressings off; and again on December 7th. There was some little stitch suppuration, but otherwise it healed kindly. Unfortunately, owing to the hurry at the operation, the two recti muscles were not firmly united to one another in closing the wound, and a small ventral hernia has developed in consequence.

He was allowed out of bed on January 5th, and left the hospital on January 30th convalescent. His restoration to complete health was a very gradual one. At the time he left the hospital he was still very anemic, and weighed only 4st., and it was not until May, or six months after the accident, that his anemia entirely disappeared.

CLINICAL EXAMINATION OF THE BLOOD.

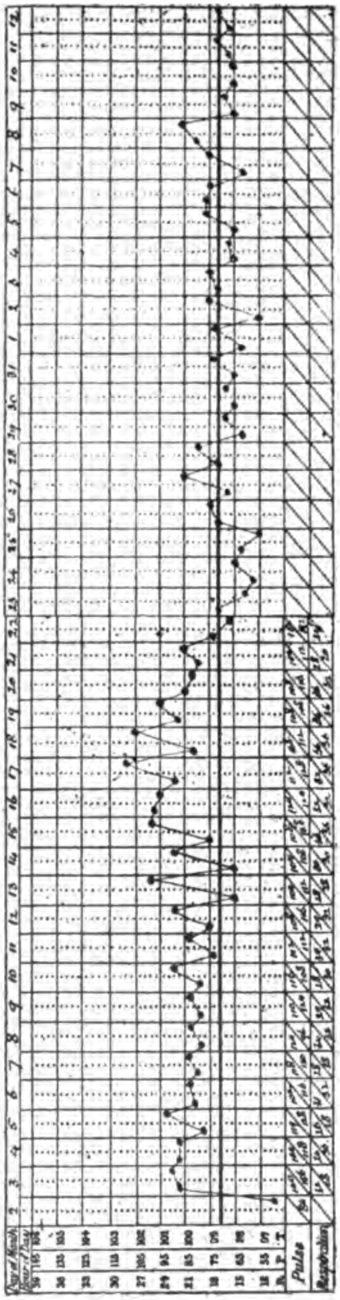
Dr. MacDonald (Pathologist to the General Hospital) has made a series of most careful investigations of the changes which took place in the blood after the accident and during convalescence, and I must take this opportunity of expressing my indebtedness to him for the great care and trouble he has taken in the matter.

Blood Estimations.

Date.	Red Cells.	Leucocytes.	Hæmoglobin.
		Per c.mm.	Per cent.
December 9, 1898	4,100,000	60,000	40
" 17, 1898,	4,370,000	46,000	50
" 21, 1898	4,300,000	38,000	
January 9, 1899	——	26,000	
" 17, 1899	——	17,000	
February 9, 1899	4.500,000	25,000*	
May 4, 1899	4,480,000	10,440	75

* This observation was made in the afternoon when digestion was probably active.

The examination of fresh specimens of blood showed nothing beyond the increased number of leucocytes. The red blood cells, both in the fresh and stained specimens, presented a remarkably normal appearance throughout. A very few poikilocytes were seen, and only two or three nucleated forms (normoblasts) were seen during the entire investigation.



For the examination of leucocytes the blood films were fixed, as a rule, either in formalin or alcohol, or in formalin vapour, and stained with methylene blue and eosin.

It should be understood that the term "lymphocyte" here has been used to describe the small mononculeated cells of the blood with a dark staining nucleus and small amount of clear or finely granular (basophile) protoplasm, the total size of the cell, at the most, only slightly exceeding that of the ordinary red blood cell. It is therefore possible that some of the leucocytes described above as lymphocytes might be described by others as hyaline, or as belonging to the smaller variety of mononucleated cell. Making due allowance, however, for this, the relative proportions of the different varieties given above will not be much altered.

With regard to the unclassified varieties of leucocytes described as varying from 7 per cent. to 1 per cent. the following cells were noticed:

(*a*) A few leucocytes, filled with large clear granules, almost like small vacuoles. These cells had usually a rather pale multipartite nucleus. Similar bodies were also found in other leucocytes, together with fine and coarse oxyphile granules.

(*b*) One typical and several antitypical myelocytes.

(*c*) Some cells, three or four times the sizes of a red cell, resembling enormous lymphocytes, with a small amount of granular (basophile) protoplasm.

(*d*) Transitional cells with some fine oxyphile granules.

The following observations were made on December 9th and 17th with a Gowers's hæmocytometer, and on December 21st and subsequently with Thoma-Zeiss hæmocytometer.

DIFFERENTIAL COUNTS BASED ON COUNTS OF FROM 500 TO 1,200 LEUCOCYTES.

	Dec. 9th.	Dec. 21st.	Feb. 15th.	Mar. 1st.	May 4th.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Leucocyte: Finely granular, oxyphile, ordinary, multipartite	81.6	78.9	60.1	78.0	61.9
Lymphocytes: Small, mononuclear	6.0	11.4	7.1	5.0	14.3
Large mononuclear and transitional.	12.0	8.6	30.1	13.0	17.1
Coarsely granular, oxyphile, ordinary eosinophiles	0.3	11.1	2.3	3.0	6.7
Abnormal unclassified forms*	0.1	—	0.4	1.0	

* This observation was made in the afternoon when digestion was probably active.

A fuller account of the leucocytes in this case will be published later, but with this explanation and reservation it seems possible to state that the removal of the spleen in this case was followed by:

1. A marked pathological leucocytosis better marked than in any hitherto recorded case.

2. A proportionate dimunition in the number of lymphocytes, notwithstanding the slight hyperplasia of the lymphatic glands.

3. A proportionate and large actual increase in the large mononucleated forms, which seems to throw discredit on the theory that the spleen is specially concerned in the production of such cells.

4. An abnormal number of the so-called transitional cells exhibiting changes in their nuclei, and protoplasm, as in the transformation of large mononucleated cells into finely granular oxyphiles.

5. A remarkable want of evidence of interference with the ordinary red blood cells.

DIAGNOSIS AND TREATMENT.

The diagnosis of the exact lesion in cases of rupture of the spleen is generally a matter of some uncertainty until the abdominal cavity is opened. The patient in this case had the classical symptoms associated with internal hemorrhage, with evidence of free fluid in the abdominal cavity. This, together with the absence of special symptoms pointing to lesion of the stomach or intestine, made it probable that the bleeding came from a mesenteric vessel, or from a rupture of either the liver or spleen. The presence of superficial bruising on the left hypochondriac region made an injury of the latter organ the most probable.

I am of an opinion that when once the diagnosis of severe intraperitoneal hemorrhage has been made, immediate abdominal section offers the patient the best or the only chance, whatever be the source of the bleeding. In cases of severe accident, it may be necessary to wait a few hours, until the patient shall have rallied from the shock of his accident; but directly it is seen that the anemia is increasing in severity, the sooner, if possible, the abdomen is opened, and an attempt made to find and stop the source of the bleeding, the better.

The relief of pressure on opening the abdominal cavity in these cases is apt to cause at once an increase in hemorrhage, and the short delay which occurred in this case while the bleeding area was being found and secured nearly cost the patient his life. When once the source of the hemorrhage has been stopped, the pulse will frequently at once begin to improve, but no time should be lost in attempting, in severe cases, to cleanse the peritoneum of either blood or clot.

Transfusion of saline fluid into the subcutaneous tissue, and hypodermic injections of strychnine are the best methods of tiding over the immediate risk of death from hemorrhage, and should be had recourse to immediately the bleeding is staunched, and while the remaining steps of the operation are being rapidly completed.

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Removal of the spleen for disease has become a well recognized operation. Vulpius of Heidelberg, in 1894, collected

117 cases, and many more have been published since. The general death-rate of the operation, excluding cases of leukemia, which does not seem a justifiable operation, is about 34 per cent. Examinations of the blood after such operations have thrown considerable light on the probable functions of the organ, but any conclusions from them are apt to be vitiated by the fact that the blood has usually been in an abnormal state before the removal of the organ. The spleen has also been removed a considerable number of times for a prolapse through an abdominal wound. In fact, removal of such a prolapsed organ, seems to be a more successful procedure than its replacement, if we are to judge by the published list of such cases. It is only during the last seven years that active surgical measures have been undertaken, with any success, to save the lives of patients suffering from rupture of the spleen, without abdominal wound. Lane, in 1890, recorded two unsuccessful attempts to remove a ruptured spleen, but Regnier, of Breslau, in 1892, was the first to actually remove the organ with success. Since then a few more successful cases have been recorded, notably three cases by Messrs. Ballance and Pitts, who published a full and interesting account of these subjects in the *Clinical Society's Transactions*, for 1896. Since then two more cases have been published by foreign surgeons, making in all, with my own, seven cases. The table gives a few details of these cases.

SUCCESSFUL CASES OF SPLENECTOMY FOR RUPTURE.

Surgeon.	Date.	Age.	Sex.	Blood Change.	Remarks.
1. Reigner (*Berliner klinische Woch.*, 1893.)	May, 1892.	14	M.	Red cells, 2,500.000; white cells, 25,000.	Enlargement of all external lymphatic glands, gangrene of left foot.
2. Ballance and Pitts *Clin. Soc. Trans.*, xxix., p. 77.	Sept., 1895.	10	M.	Red cells, 4,580,000; large excess of white cells.	Spleniculus left; cervical, inguinal, and axillary glands enlarged.
3. *Ibid.*	Sept.. 1895.	45	F.	Red cells, 3,730,000; white cells, 20,000,	Slight enlargement of lymphatic glands; severe symptoms during convalescence.
4. *Ibid.*	Oct., 1895.	36	M.	Red cells, 3,590,000; white cells, 17,000.	Axillary glands enlarged; severe symptoms during convalescence.
5. Chrobak (*Centralblatt fur Gynakologie*, Dec. 1898.)	July, 1898.	—	F.	—	Patient 7 months pregnant; delivery at term.
6. Bernhardt (*Munch. med. Woch.*, Nov. '97.)	Nov. 1897.	19	M.	No lukæmia; red cells, 2,500,000.	No enlargement of lymphatic glands.
7. Heaton (present communication.)	Dec. 1898.	9	M.	Red cells, 4,100,000; white cells, 60,000.	Lymphatic glands slightly enlarged; severe symptoms during convalescence,

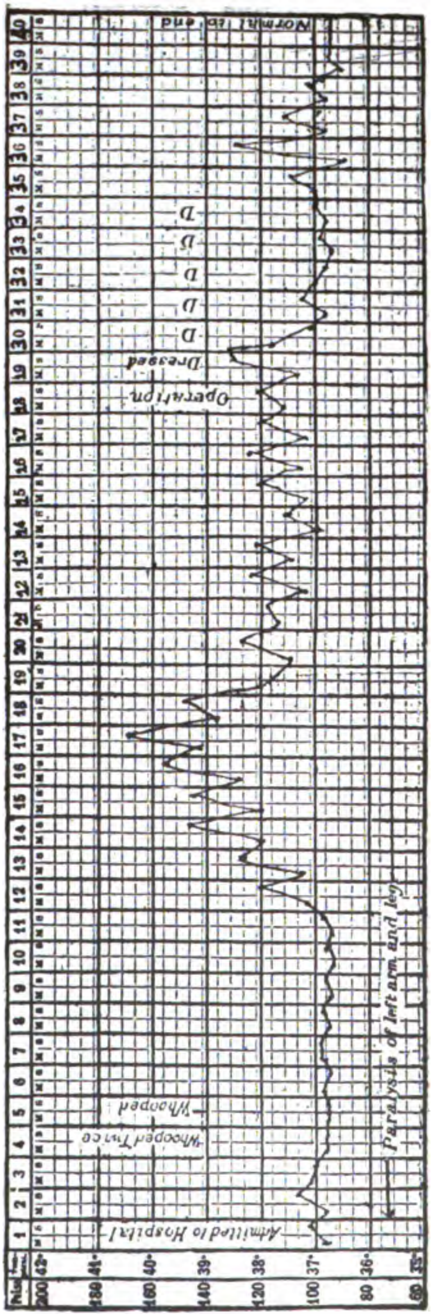
CASE OF ACUTE INFANTILE HEMIPLEGIA, WITH RECOVERY.

By James Priestley, M.D.,
Lee-on-the-Solent.

THE case which I wish to relate is one of hemiplegia, lasting forty days, coming on sddenly in an infant of 20 months. Blindness lasted for the first fortnight: screaming fits began at the end of the first week, and continued night and day for twelve days. Clonic movements of the left foot and hand—like those of paralysis agitans—lasted a month. Suppurative arthritis occurred in the third week. Jactitation and contortion of sound side lasted three or four days. The temperature was normal throughout, except a rise caused by the joint suppuration. Complete recovery occurred eventually. The notes of the case are as follows:

V. M. D., a girl of 20 months, ill with a mild whooping-cough for two months, was suddenly attacked with pain in head, and had, as stated by the mother, something resembling a fit, on June 27th, 1897. A rash on the back was seen on the 28th, and on the 29th, in the afternoon, she was brought to the North-Eastern Hospital (Metropolitan Asylums Board), as she was supposed to be suffering from scarlet fever. Here some erythematous patches were observed on the legs, but fauces, tongue and temperature were normal. Some little time after being placed in her cot, the nurse noticed that she was in a semi-unconscious state, not recognizing anything around her, or anything done to her. On examination it was found, that with sharp pinching, she could be roused to make a short cry. Respiration irregular, with an occasional sigh; conjugate deviation of eyes to the left, and head turned also to the left; pupils reacted to light; could move both arms; the left felt much more rigid than the right; the abdomen and thorax revealed no abnormal physical signs. Enemas of hot coffee were given.

June 30th. General condition of torpor remains, but left arm and leg are now powerless; left eyelids do not close completely; left naso-labial groove deeper than the right; knee-jerks not obtained; the pulse 108. Ophthalmoscope reveals nothing abnormal.



July 1st. Same general condition—semi-unconscious and left hemiplegia. Pulse 96, irregular and weak.

July 2nd. Whooped once or twice yesterday and today. General condition the same, but a tremulous movement of lower jaw has begun, and the right leg — flexed at hip and knee—is kept in rapid irregular movements. She can hear her mother's voice, but is unable to see her. Yawns a great deal.

July 3rd. Same condition. Pulse 80, and irregular. Heart sounds, normal.

July 4th. *Tache cerebrale* (?). During last night, loud piercing screams (like those of tuberculosis meningitis), began, and are now going on at short intervals. Yawns and sighs a great deal. Rigidity, paralysis, and general condition remains as on July 2nd.

July 6th. The loud piercing screams now more frequent, go on day and night, and can be heard about 30 yards away from the ward.

July 9th. Quick, clonic movements of the left foot, small and regular, resembling those of paralysis agitans, are now seen. She keeps on rubbing her lips and face with her right hand in an automatic fashion, and keeps biting her lip.

July 12th. The screaming, the paralysis, and the movements of the left foot continue, and she has produced an ulcer, large, greyish and ragged inside her lip, and one inside her left cheek. Seems able to accommodate her eyes for distance to some extent. Wild contortions of right side of body, and at times slight opisthotonos.

July 15th. The screaming fits are now getting less loud and less frequent, but the jactitation of the right limbs, the small clonic movement of left foot (and occasionally of left hand), and the rigidity of left arm and leg continue as before. The temperature has been getting higher, and is to-night 40.8° C. Today she ceased biting her lip and cheek. In the evening she slept a little while, during which the rigidity of left arm and leg passed off.

July 16th. Now quite quiet, and today recognized her mother by sight, as well as by hearing.

July 18th. Now fully conscious.

July 25th. Left shoulder joint discovered distended, and aspiration showed pus.

July 26th. Joint opened and drained under chloroform.

August 1st. Counter-opening made, and tube passed through joint.

August 3rd. Three large boils on buttocks incised.

August 4th. Drainage tube removed, The rigidity and clonic movements continue.

August 9th. Shows signs of returning power in left arm and leg; the clonic movements still continue in left foot.

August 10th. Today has found her voice, and can say "No" distinctly.

August 12th. The clonic movements have now quite ceased.

August 21st. Can now walk two or three yards, but left leg gives way soon.

August 27th. Walks steadily and well and is quite talkaive.

August 30th. Sent home. Her shoulder-joint unimpaired in movement, and the ulcers of mouth quite healed. Her bowels were regular, all through, and the analysis of the urine showed nothing abnormal. Her mother states that from six months old she used to take "hysterical fits" at intervals, was very easily excited, and apt to scream loudly if opposed in any way.

I am inclined to the opinion that (1) the whooping-cough, and (2) the excitement caused by the removal from home of an excitable child are the main factors in the etiology, and that as vision, leg and arm were affected, a meningeal hemorrhage occurred, exercising pressure over the angular, supra-marginal, ascending parietal, and ascending frontal convolutions of the right side. The continued rubbing of lips and cheek with right hand might be an example of "reflex act," occasioned by by some sense disturbance in the skin and face. The screaming and contortions, from whatever cause arising, were not influenced to any marked degree by very liberal doses of chloralamide. The suppurative arthritis was largely perhaps a coincidence, but probably the paralysis predisposed to it.

Constipation in Infants.—The first step must be to regulate the habits and life of the mother. She must be placed on a diet of fresh meat, fresh vegetables, and freshly cooked fruit, with due provision for regular exercise, and restriction in the matter of tea drinking, and other dietetic irregularities. This *régime* will diminish the proteid, and increase the fatty constituents of the milk, and will go far to rid the infant of the tendency to constipation. Should it fail, the best treatment for the child is the administration of cream in doses of from one to two teaspoonfuls in warm water from time to time just before the periodical meal.—*Medical Press and Circular*, July 5, 1899.

EDITORIAL COMMENTS

Intestinal Origin of Tuberculosis

The question as to whether meat and milk of cattle suffering from tuberculosis is infectious for human beings, has generally been answered in the affirmative. The enormous number of cattle slaughtered every year by government authority, and the care taken in their inspection, shows the deep conviction of medical men and health officers on this subject.

Professor Adami, in an address before the Canadian Medical Association (August, 1899), calls attention to how scanty the positive evidence is to prove the hypothesis of the transmission of animal tuberculosis to man. Even in the case of butchers and others who feed on tuberculous meat, every other possible source of infection would have to be excluded, before we could arrive at an absolutely sound conclusion. On the other hand, he points out that human tubercle bacilli when innoculated into cattle, tend to become localized and lead to only transient effects, while fowls may be fed on bacilli contained in human sputa with impunity. From the number of cases which occur during the milk drinking period of life, however, he feels satisfied of the intestinal origin of tuberculosis.

That tubercle bacilli do occur frequently in the milk of tuberculous cows, even when they are not affected with tuberculosis of the udder is firmly established, although various investigators differ as to the frequency of their occurrence.

Dr. Still in a paper read before the British Medical Association (*vide* PEDIATRICS, 1899, viii.), endeavors to help settle the question of the origin of tuberculosis in infants, by determining the comparative advancement of the tubercular processes in the mesenteric and bronchial glands. He thinks it fair to consider that those glands which have undergone caseation or cicatrization, were infected earlier than those in which such changes have not taken place. He also assumes that in the vast majoritv of cases of primary infection of the bronchial glands, the infection *atrium* was the lungs, and in the case of the mesenteric glands, the intestines. According to this method of reasoning, of 269 necropsies on tubercular subjects, he can say that 57.2 per cent. were of respiratory, and 23.4 per cent. were of intestinal origin. Of these 269, 43 per cent. occurred during the milk drinking period, and 56 per cent. during the first three years of life. Some would argue the comparative rarity of the intestinal origin of tuberculosis, from the infrequency with which primary lesions of the intestinal mucous membrane are met with.

It seems fair, on the whole, to conclude that some cases of tuberculosis are due to infection through the alimentary canal, although the number is not so great as one might be lead to suppose. T.

Putting a Price on Charity

Two arguments may be advanced against the system so much in vogue, in this, and other cities, of charging a small fee for medicines and dressings furnished in a dispensary, or for the use of a bed in a hospital. In no one of these institutions probably, does the small sum demanded, compensate entirely for the drugs, board and general care of the patient, not to mention the medical attendance. Frequently, self-respecting individuals, who could afford to pay a physician, and who would hesitate to accept absolutely free treatment, resort to such institutions, because they can obtain treatment cheaply, overlooking the fact that they are the recipients of charity.

The second argument is that the superintendents' clerks are liable to refuse to admit worthy, though penniless, cases, alleging when such apply for admission, that the hospital is full. They probably think thus to gain the approbation of the management by curtailing expenses. This may not be the true reason for their action, but that they do sometimes turn away the worthy pauper cannot be denied. T.

Medicine and Pedagogy Upon this subject will be found printed below a selection from the *Progrès Médical*, Sept. 23, 1899. The noble and enlightened efforts of M. Bournville deserve all praise. For the past nineteen years his devotion to the medico-educational training of defective children has been constant. It is much to be hoped that the encouraging results of his untiring labor may become more widely known. American philanthropy has not altogether neglected the training of feeble-minded and perverted children, but if medical men at large could be more fully convinced of its utility, the general public would not be long in reaching the same conclusion.

Such a conclusion would save to comparative usefulness many helpless and hopeless lives. At present, even in the families of the well-to-do, imbecile infants are commonly allowed to grow to adult life in utter moral and mental neglect, and too often the medical adviser has assented to the popular impression that such cases are irremediable and is himself responsible:

While deaf mute and blind children have latterly enjoyed increasing hospital and educational advantages, another class —idiotic, imbecile, backward, nervous and epileptic children— were until 1878 virtually abandoned. A physician of Bicêtre, M. Bourneville, has interested himself deeply in this subject. Profiting by his membership in the Municipal Council of Paris, he secured the construction of a special department for these cases at Bicêtre. It harbors nearly 800 children. His work has been recently described at length by a distinguished physician, Dr. Eloy, from whom the following description is borrowed:

In his annual reports from Bicêtre (since 1880) M. Bourneville has given a brief description of his methods. He has modestly refrained from mentioning at the same time his own private medico-pedagogical institute at Vitry (Seine). The latter is for the children of the upper classes, and embodies great comfort, healthfulness and convenience. It aims at the *physical*, *intellectual* and *professional* training of defective children.

The methods have been borrowed everywhere and from all schools, classical and special.

Psychologist, physiologist and clinician in one, the experienced therapeutist ought to seek "that which is, that which *underlies* in children." He will utilize his resources, however small, to train up most perfectly all the latent faculties he may find.

The first principle is that the patient is to be occupied continually, during waking hours, with physical, hygienic and intellectual exercises—so many as will prevent idleness and yet fall short of fatigue.

When should the treatment begin? Early, as soon as the first signs of idiocy present themselves. In this all opinions concur.

An idiot child (or, as they say among the patients' friends, a "backward" child) knows little or nothing of walking, of the use of his hands, or his sense organs. He is perhaps uncleanly. Whence the indication is to begin with the education of the senses. Commencement is actually made with the education of *sight and smell*. This is an easy task in vast gardens filled with beautiful flowers of various odors. The child learns, under the direction of an attendant or master, to see, recognize, touch and even to name the plants along the garden walks.

Walking and the *muscular sense* come next; methodical flexions and extensions; massage, see-saw, ladder-climbing. For training the hand and opponation of the thumb springs, balls and various other toys are specially designed. For the *touch*—heat tests, various fabrics of cotton and wool, polished surfaces; then instruction in movements like lacing, buttoning, tying knots, boring holes with an awl. We thus reach the larger object of *awakening* the *attention* and developing the *instinct of preservation*, the absence of which two signs makes a marked clinical symptom of idiocy.

In the pedagogic work the exercises are mutual and collective. The individual attention is appealed to, also the imitative faculty. The teachers begin with lessons in letters. They emphasize still more lessons in things, geometrical figures, solid bodies, fabrics, colors, surrounding objects. The children observe and handle vegetables and animals; they visit the stables, the parks, the botanical gardens. The backward infant sees and touches; he digs the soil and plants flowers with his own hands, and is employed exactly as long as his *attention* is capable of holding out.

Physical training—fencing, dancing, military exercises, gymnastics—is carefully adapted to the patient's need, and general principles of medicinal therapeutics are fully carried out.

To judge of the *professional* accomplishments of these children, one need only visit the workrooms at the institution and the case is proved.

With M. Bourneville and his pupils we are able to affirm "the possibility of evident betterment in the condition of a large majority of idiot children." They develop enough to become fit for life in society, the constant condition being, of course, *that they be treated early.*

Such results might almost be considered beyond hope. B.

The Phonendoscope

We note with satisfaction that one of the most recent French works on medical diagnosis (*Manuel de Diagnostic Médical*, Debove-Achard, Paris, 1899), gives a relatively adequate description of the phonendoscope. The notice concludes with these words: "We have used the phonendoscope since its introduction into France in 1896, and can only congratulate ourselves upon the possession of it. Among the current aids to physical diagnosis it has just title to a worthy place."—A reason for introducing the subject here is that the instrument is specially adapted for use upon the chests of children. The child's ribs are small and elastic, and the thoracic muscle is thin, so that, even for beginners, "stroking" is an easy and intelligible process. When the phonendoscope is well warmed before using, it may be readily laid upon the chest of a sleeping baby without waking him, and gentle stroking is usually much less distressing than percussion. To become proficient one needs to give a certain amount of patient study to the principles upon which the instrument is based, and this, of course, involves "trouble," but "trouble" is a bad argument against a device which finally promises greater accuracy and speed in diagnosis. It is not necessary, with Bianchi, to practice till "the fissures between the lobes can be recognized." Within a short time any ordinarily intelligent physician, who will at first control his results by percussion, can become confident of his findings.—One influence that has worked against the phonendoscope in the United States is the bad results gotten from the number of imperfect and cheap imitations of the original instrument that have tempted unwary purchasers. A plan that is perfectly safe for the student is to purchase only the original article, imported from the German maker in Kassel. Users of disappointing modifications of the original will be amazed when they once secure a good pattern. A wise course is always to refit the newly purchased instrument with large, stout, rubber tubes that will not "kink" easily, and to select ear-pieces that will closely fit one's external meatus.—Certain defects of the instrument should, of course, be acknowledged. The resonance chamber collects sounds from a large area; and localized cardiac murmurs or sounds over a sunken infraclavicular region, can only be got with the stroking rod. In our experience the results of the later method are unsatisfactory, and the ordinary stethoscope will be more suitable. But there can be no doubt that for fine sounds—such as the earliest pericardial friction-rub or the crepitant râle over feebly-breathing lungs—the phonendoscope is invaluable. Physicians who are unfortunate enough to be partially deaf cannot afford to postpone the great comfort and satisfaction it will bring them. B.

SOCIETY REPORTS

NEW YORK ACADEMY OF MEDICINE—SECTION ON PEDIATRICS.

Stated Meeting. Oct. 5th, 1899.

WILLIAM H. THOMPSON, M.D., Chairman.

Certain Aspects of Bone and Joint Diseases of Interest to the General Practitioner.—Dr. VIRGIL P. GIBNEY read a paper with this title. He said that the occurrence of outbreaks of poliomyelitis in certain localities had recently aroused a very strong suspicion of the infectious nature of this disorder. It was true that great relief might be afforded by prothetic measures. It was fair to assume that the force of the inflammation could be broken, and that the ganglion cells could be saved from destruction. Rest for the limbs was the best method of protecting the muscles. Our efforts should be directed towards husbanding the remaining strength. Ligaments were prone to stretch, and subluxations occur. Rest was far better, in his opinion, than resort to stimulating exercises. The deformities were especially obstinate, and hence the treatment should be instituted early and be carried out vigorously. In speaking of malignant disease, such as sarcoma, reference was made to the effect of occupations, particularly those in which certain parts were subjected to frequent blows. Some of the most distressing curvatures of the spine resulted from empyema. In cases of irritable spine, the trauma sometimes antedated by many months the development of the symptoms. In diseases of the bodies of the vertebræ it should be remembered that tenderness was the exception. This was not always true, however, in adults. Why this should be so, it was difficult to say, unless there was apt to be a hysterical element in the adult. In examining the spine, the vertebral column should be moved freely in all directions, and subjected to concussion, in order to determine any decrease of flexibility, and the presence of reflex spasm. The age of the patient often rendered valuable aid in differentiating between malignant and tuberculous disease of the spine. The absence of deformity, the rigidity of the column, and the attitude and behavior of the patient were the chief features of interest to the general practioner in diagnosticating Pott's disease. Every precaution was taken by such a child to avoid concussion of the vertebral column. What was known as "the typhoid spine," sometimes led to confusion in diagnosis. In these cases there was exquisite tenderness, but no deformity. The diagnosis was made by the history, and the promptness with which it yielded to treatment. Emphasis was laid upon the comparative rarity with which the family physician made the diagnosis of Pott's disease before the appearance of deformity. Rachitic deformities were often diagnosticated as Pott's disease, and a grave prognosis given, which was not justified by the subsequent course of the affection. A certain number of cases of Pott's disease began with lateral curvature; the fact that true lateral curvature was comparatively rare in young children, while that form preceding Pott's disease was common in infants, should aid one in making the diagnosis. In a tuberculous hip or knee, lameness was an early symptom, and reflex spasm was almost pathognomonic. The lameness occurred at first at certain times of the day, and underwent exacerbations which were dependent upon trauma. These exacerbations gradually, but steadily, became more severe, although the atrophy might be very slight. It was sometimes difficult to detect the reflex spasm, and this could be best done by moving both the sound and the affected limb throughout its full arc of motion, comparing the two limbs. In disease of the knee joint, the change of contour was an additional help. There was no time while the child was on its feet that there was not at least slight lameness. This persistence of the lameness was an exceedingly important diagnostic sign. Change in contour, and the presence of reflex spasm sometimes meant malignant disease. Sarcoma developed in adults rather more frequently than tuberculous disease.

Dr. A. Jacobi opened the discussion. He said that in cases of sarcoma there was a sensation of semi-fluctuation, even when the growth was not distinctly cystic, and he had come to look upon this as an important diagnostic point. In infancy scurvy was commonly mistaken for acute rheumatism and poliomyelitis. It should not be difficult to prove that the movement of the limbs was due to pain and not to paralysis. The superiosteal hemorrhages, which were so very painful were not epiphyseal or in the joints, but were situated, as a rule, in the diaphyses of the long bones, and away from the joints. For this reason the joint could be moved, without producing pain, provided the other parts were immobilized. The cases in which the diagnosis was especially difficult were those in which there were hemorrhages into the joint, at the same time that there were hemorrhages under the periosteum. Such cases were, however, quite exceptional. The deformities following rachitis were important and far-reaching, for most of the internal organs were usually deformed in consequence. The speaker recalled one case in which the aorta itself, by dislocation of the lungs, was bent upon itself, and the circulation thereby greatly impeded. It was because of this impeded circulation that the rachitic children were so subject to attacks of bronchitis. The heart's action was interfered with greatly, even when there was simply the triangular chest. The spleen and liver were generally larger, than normal, in rachitic children, and these organs were crowded downward, because of the narrowing of the thorax. The kidneys were often dislocated, particularly in cases exhibiting much scoliosis. This change in the position of the kidneys was, in itself, sometimes responsible for the occurrence of nephritis. From these considerations it was evident that the treatment should be begun quite early in the disease.

Dr. JOSEPH D. BRYANT said that slight injuries more than severe ones frequently gave rise to serious results. A slight blow on the cancellous portion of a bone often resulted in the breaking down of this area. Instances were recalled in which sarcoma had developed after very slight traumatisms. It was pardonable to diagnosticate such cases at first as periostitis, but if they persisted for any great length of time there was good ground for suspecting sarcoma. Rheumatism following injuries to bones and joints, he was inclined to look upon as being largely the result of prolonged confinement. When the knee joint became inflamed, the limb was naturally placed in a position of flexion to give greater comfort; and, in time, there would result a deformity characterized frequently by an outward rotation of the limb, due to the action of the biceps. He had seen a number of cases of necrosis of the lower and posterior aspects of the shaft of the femur, in which the diagnosis had been either rheumatism, or "growing pains." Therefore, whenever a patient exhibited pain and tenderness in the posterior surface of the popliteal space, with thickening, it was wise to bear in mind the possibility of the occurrence of necrosis at that situation. Bursitis should be distinguished from inflammation of the joint cavity itself. If early diagnoses were made, the deformity would be limited, or prevented, and involvement of the joints would not take place.

Dr. **Charles N. Dowd** divided tuberculous disease of bones into three classes, viz.: (1) Those treated for sprains, and (2) those treated for rheumatism, and (3) those improperly treated for tuberculosis. In disease of the knee and ankle the laity seemed to be especially impressed with the part supposed to be played by trauma; hence such cases were most often treated, and for a long time, as sprains. Most of the cases of joint disease began with inflammation of the epiphysis, and there would be found on pressure, a characteristic tenderness.

Dr. **John B. Walker** spoke of the part played by traumatism—for instance, in causing detachment of the semi-lunar cartilages of the knee joint. If the diagnosis were made early, and the patient put to bed and their parts restored to their proper condition, a cure could be effected. The lateral motion of the knee must be restricted, but it was not necessary to limit flexion, and extension. If not promptly treated, a chronic synovitis might be established.

Dr. **S. A. Knopf** called attention to the great prevalence of chronic tuberculous, or scrofulous diseases in children. He stated that Neumann had examined last year 125 boys and 132 girls in the public schools of Berlin, who had been reported as unable to attend school regularly. Of these, 114 boys and 115 girls had presented scrofulosis, in one form or another. The speaker inquired if Dr. Gibney had had any experience with Bier's treatment of early joint tuberculosis, by producing a local venous hyperemia. This was done by ligating the member above the affected joint with an elastic bandage of medium width. This was applied several times a day for a period varying from ten minutes to one hour or more, the bandage being only sufficiently tightly applied to impede the venous circulation. The curative principle of this method seemed to lie in the fact that the locally increased carbonic acid gas, and perhaps also an increased phagocytosis attacked the micro-organisms. The results of this treatment, in the hands of some, had been so gratifying and prompt in tuberculous joint affections, and so decidedly negative in joint diseases due to other causes, that some authors had come to look upon the method as possessed of diagnostic value. These claimed that proper relief, after one or two applications of an elastic band above the diseased joint, might be considered pathognomonic of tuberculosis. Touching upon the matter of prophylaxis, as well as the therapeutics of tuberculosis or scrofulosis in children, the speaker declared that nowhere else had such excellent results been secured as in seaside sanitoria. The seaside sanitoria for scrofulous and tuberculous children of Belgium and France had reported from 70 to 80 per cent. of cures; the German sanitoria 50 per cent., and those of Italy 35 per cent. In the last named country rachitic affections seemed to be more prevalent than anywhere else. It was to be regretted that this country had scarcely any such institutions.

Dr. **Andrew H. Smith** said regarding bone lesion following typhoid fever, that some years ago he had seen in hospital practice a case in which superiosteal abscesses had developed symmetrically on the crests of the tibiæ at about the same time. In both limbs there had been superficial exfoliation of the bone. Shortly afterward he had seen another case of this kind, the only difference being that the inflammatory process had gone on to suppuration in only one limb. The speaker also recalled a case in which a lady of sixty years had stumbled over a cat, and bruised the right trochanter. A week or two later she had fallen from a street car, bruising the same spot. In a short time a tumor had developed in the superior extremity of the femur, and in due time had extended into the pelvis, and had eventually caused death.

Dr. **A. Ernest Gallant** said that the pseudo-fluctuation referred to by one of the speakers as indicative of sarcomata was found in several other conditions. He was of the opinion that some cases of joint disease followed slight injuries because of the improper treatment of an ordinary sprain. The usual method was to immobilize the part for a time, and subsequently to subject it to massage. The reverse of this process, i.e. immediate massage, had been earnestly advocated by the late Dr. W. W. Van Arsdale, and he had himself reported 1,200 cases most successsully treated by this method. Billroth had reported having cured cases of sprain in one-fifth the usual time by treating them to immediate massage.

Dr. Edward H. M. Sell referred briefly to a case seen by him last year, that of a lady of nineteen recovering from typhoid fever, in whom a femoral abscess had developed. A cousin of this lady, he had been informed, had been treated at the Presbyterian Hospital, and had over a dozen such abscesses.

Dr. Gibney closed the discussion. He said regarding the rôle of traumatism, that his opinion was that the traumatisms which surgeons were called upon to treat, were really the results of the disease, and not the cause. Such children, he believed, were especially prone to fall in the incipient stages of bone disease, and before the latter had been recognized. Regarding the arthritis, resulting from injury to the semilunar cartilages, he would say, that he often felt justified in diagnosticating a local anthritis, resulting from repeated slight wrenchings—hardly subluxations—of the semilunar cartilages. The Bier's treatment of joint disease had never appealed to him very strongly, and for this reason he had never been disposed to give the method an extensive trial. He agreed with one of the speakers regarding the great value of seaside sanatoria. Indeed, he would be greatly pleased to have at his disposal an institution in the country, open the whole year, in which children with bone and joint diseases might be treated.

Phenocoll.—In his paper on "Malaria in Children," in our issue of September 15, 1899, Dr. Moncorvo refers to "Phenocoll Chlorhydrate, introduced by the firm of M. Bayer, of Elberfeld." This, evidently, is a slip of the pen, the Chemische Fabrik auf Actien, vorm. E. Schering, in Berlin, being the manufacturers of the same.

PRACTICAL NOTES

Indications and Contra-Indications for the Radical Operation for Inguinal Hernia in Children.—The indications for operation may be classed as follows:

1. Cases of adherent omentum.
2. Cases complicated with reducible hydrocele.
3. Cases irreducible and strangulated.
4. Cases unable to obtain the care and attention requisite for successful mechanical treatment.
5. Cases over four years of age, where mechanical treatment has been faithfully tried for a number of years, without benefit.
6. Femoral hernia in children, which, though rare, cannot be cured by trusses.

The author believes it is seldom necessary to operate upon children under four years of age, and the practice of some surgeons of operating upon infants under one year is open to serious question.

Umbilical hernia in children should, with very rare exception, never be operated upon, for the reason that they are almost invariably cured, either spontaneously, or by means of mechanical support.—*Coley, Sajou's Cyclopedia,* viii., p. 432.

Treatment of Chronic Eczema in Children.—The hardened cysts must be softened by sweet oil or some antiseptic solution applied on sheet lint for about 24 hours. Bichloride of Mercury (1—10,000), or Carbolic Acid (1—100) are advised, but Carbolic Acid should be avoided, if the disease is extensive. Then use Larssar's paste. Its composition is as follows:

Salicylic Acid	1 part.
Zinc Oxide	25 parts.
Starch	25 "
Vaseline	50 "

In very young babies this may be diluted with equal parts of ungt. acid. boric. or vaseline. This paste is rubbed into the skin, and the part covered by a bandage. Where the face is affected, a mask of lint is employed. The dressing is renewed once a day, the skin having been first completely cleaned off with pledgets of cotton covered with the boric acid ointment or vaseline. This is to remove the paste that has been applied the previous days, so that a fresh supply can be rubbed in.—*H. D. Chapin in the Post Graduate.*

Rhinopharyngitis in Young Children.—A simple procedure for local treatment is recommended by Gaston, viz., the introduction into the nostrils three or four times a day of a cotton tampon rolled to a point, covered with borated vaselin, with or without an astringent, such as the following:

℞	Antipyrin	gr. viii-xvi
	Acidi borici	gr. vi
	Vaselini	ʒv

M Ft. ungt. Sig. External use.

If the child greatly objects to the tampons, one or two drops of the following mixture should be instilled into each nostril, night and morning :

℞	Menthol	gr. viii
	Olei amygdalæ dulcis	ʒi

M Sig. External use.

If the direct treatment of the pharynx seems indicated, it may be swabbed with iodin in glycerin, equal parts.—*Journal Amer. Med. Association.*

Treatment of Tubercular Abscess by Injection of a Formalin-Glycerin Solution.—Dr. J. HAHN treats successfully tubercular arthritis and cold abscess with injections of formalin-glycerin, the curative effect of which is much superior to that of iodoform injections.

First a puncture is made with a fine trocar, to which is fitted a sterilized syringe. The cavity is washed out with boric acid solution and then injected with a 1 per cent. formalin-glycerin solution. A quantity equivalent to one-third or one-half of the pus evacuated is used. The orifice it then closed, and the limb put at rest. Soon after a local reaction, more or less intense, occurs, producing swelling, fever and pain, which may become so intense as to necessitate an injection of morphine. These phenomena disappear in a few days, and the quantity of exudate likewise diminishes.

At the end of two weeks a new puncture, levage and injection is gone through with. In certain cases, however, a second injection is unnecessary, the purulent secretion being dried up by the first.

This treatment produces particularly favorable results when it is used upon joints which are distended with pus. In these cases the necrotic tissue and caseous masses must be removed also, and the medicated liquid made to penetrate all the corners and recess of the joint. Dr. Hahn has found this treatment specially adapted to the hip and the knee, and often seen rapid healing take place with complete preservation of function. The result was less favorable in tubercular arthritis about the hand and foot. When tuberculosis occurs here, it is sometimes necessary to perform arthrectomy in spite of several injections.

Cold abscess does not recur after one or two injections, and the spondylitis is often improved. Moreover, under this treatment Hahn has obtained a very encouraging result in a case of tubercular empyema of the pleura.—*Revue Mensuelle*, 1899, xvii., p. 479.

Atropine in Serous Diarrhea of Infants.—Infants, especially those artificially fed, are subject sometimes to a serous diarrhea which weakens them a great deal and which resists all means of treatment. Dr. Berton, at Eschench's clinic, has shown that these rebellious cases of serous diarrhea are often very favorably influenced by atropine, administered according to the following formula:

℞ Sulphate of atropine.....0 gr. 09 centigrammes
Distilled water................30 grammes

Sig. Give an infant from one to three drops of this solution every day.

The effect of this medication should be watched very closely and the dose of three drops in twenty-four hours never be exceeded.—*Sem. Med.*

ABSTRACTS

SCHOOL SEATS.

Bradford and **Stone**, of Boston (*Boston Medical and Surgical Journal*, 1899, cxli, No. 14) state: As it is often asserted that school chairs furnish one of the influential factors in the development of lateral curvature, a careful study of the proper form of school chair deserves and has received much attention. The results, however, are neither as satisfactory nor as conclusive as is desirable, as the seats supplied in our schools are not always suitable.

The use of seat-backs began about fifty or sixty years ago. Then followed the introduction of separate seats and later, about 1850, the separate desks and chairs were first used. Attention had also been directed to the horizontal "distance" between the back of the desk and the front of the seat. Although a "minus" distance in which the desk overhangs the seat was advocated by some, yet Barnard and Alcott believed in a zero distance, which was, however, a step in advance as compared with the former "plus" distance of several inches.

Barnard was the first to make definite measurements of children of different ages and to devise from this a scale for the height of the seat and desk. In 1863 Fahrner, of Zürich, published the first European scale. There have since been published in this country the Whitcomb and Bobrick scales, while in Europe the Frankfort scale, published in 1885, and the scales of the Prague and Vienna Commissions, published in 1892, are the most important. Much attention has been given to the various scales according to which fixed furniture is constructed and by which adjustable furniture is fitted. Being based on different series of measurements of children of different nationalities and classes, there have been considerable differences in the results. Moreover, different standards are taken as the basis from which seat height and desk height of adjustable furniture are computed, as, for example, in one scale knee height and in another total height is taken as the basis.

While the scales have served a very useful purpose in bringing about more accurate fitting, according to averages, they cannot, of course, compare for accuracy in special cases with individual measurements made, for instance, in the school measuring chair devised by Dr. Hartwell, in which at one sitting all the required measurements, particularly in weak children, and in children above or below the average of those of the same age are easily read off.

The problems of desk construction are, according to Cohn, (1) to secure such a "difference" in height between the desk surface and seat that the elbow with the arm hanging naturally just reaches the desk, which brings the book at the proper distance from the eye; (2) to secure such a horizontal "distance" between the seat and the desk that the body and head may not be inclined forward too far in order that the eyes may be near enough to the desk; (3) to have a proper slope to the desk surface. For purposes of reading the ideal slope is 45°, because then the eyes can be directed downward without fatigue and without bending the head forward. Such a slope, however, is not practicable for writing, and therefore, as a compromise, a slope of from one in six to one in ten has usually been adopted.

Modern construction in all adjustable desks meets the requirements of proper height. The problem is simple because there is no need of automatic change. The need for automatic change by the scholar in the horizontal distance between the desk and seat has been met in two ways, first, by movable desk tops, and second by movable seats. Of the movable desk tops there were two types. In one the surface is divided transversely, so that one part may move upon the other, usually the posterior part folding over on top of the anterior, as in the desk devised by Parow in 1865.

There are also a great variety of mechanisms by which one-half of the desk top slides upon the other. Some are comparatively simple, some are rather complicated; most of them, as of the folding type, are not used because of the break in writing surface. Some obviate this difficulty by making practically the whole of the desk surface movable, leaving only a small portion at the forward edge fixed, thus approximating the type in which the whole desk top moves. So much weight has been attached to the importance of a movable desk top by Lorenz and Cohn, among others, that much attention has been paid to perfecting the mechanisms by which the desk top as a whole is moved.

Some of the folding and some of the sliding desks meet the third requirements of desk slope by making a change at the same time that they change the distance, so that for reading there is a positive distance with an increased slope, while for writing there is a negative distance and a decreased slope. The Simplex desk of Schenck deserves particular attention. In it the "distance," the "difference," and the slope are all altered automatically by a very simple mechanism. By a simple mechanism also in the modern Chandler desk the slope and the distance may be changed together or independently as the scholar wishes. A certain amount of instruction and care is, however, necessary for the intelligent use of a desk of this sort, which is not necessary for those of the simplest construction.

Of course, in the difference in height and the horizontal distance between the seat and the desk the chair must also be considered. Thus many adjustable seats have been made at the same time that the desks were improved. It is now universally recognized, in regard to the chair, that the height of the seat should equal the length of the leg from the sole of the foot to the under surface of the thigh when the feet are placed squarely upon the floor and the knee is bent to a right angle. It is generally agreed that the seat surface should slope slightly from front to back so as to counteract the tendency to slide forward, but not slope so much as materially to tilt the pelvis if the child sidewise in the seat. The length and breadth of the seat should correspond roughly to the dimensions of the thighs. A seat of insufficient depth can cause no particular harm. A seat of too great breadth allows, while one of too great depth compels bad postures.. The last requirement is, as stated by Hartwell, that "the seat should be provided with a back that shall support the sitter's back whether he be quiescent or actively engaged, as in writing or drawing."

The great problem of chair construction has been the back. Meyer in 1867 was among the first who carefully studied the question of seating and the mechanisms involved. In the sitting posture the weight is borne principally on the tuberosities of the ischium. When the centre of gravity, which lies in front of the tenth dorsal vertebra, is exactly over a line connecting the tuberosities the body balances without muscular effort. If, however, the body inclines forward the centre of gravity falls in front of the tuberosities and must be supported by the under surface of the thighs resting upon the front of the seat. If the body inclines backward, there must be some point of support behind the tuberosities and this is found in the coccyx. If, however, the body leans either forward or backward, then the weight must be supported by complicated muscular action unless some additional means of support is furnished. The chair back gives this in the backward position. In the forward position the body drops forward, according to Fehrner, by a series of jerks until the weight is caught by the elbows resting upon the desk. In the forward position there is a decided tendency to vicious attitudes, the tendency being to hang the body from the shoulders rather than let the arms hanging from the shouders rest easily upon the desk. In the prevention of bad attitudes in the forward position the size of the chair seat, the "difference," the "distance" and the desk slope are of considerable importance as well as the chair back.

In maintaining correct attitudes in the backward position the chair back is of the utmost importance. As recognized by the Vienna Commission there are three types of seat backs. The first is the low pelvic support, the second the lumbar, the third the dorsal. These, of course, may be combined.

If children seated, but tired of sitting, are watched it will be noticed that they either lean upon the desk or slide down upon the chair, to take as far as possible a reclining position, to relieve the downward pressure upon the pelvis and the strain upon the lumbar ligaments and fascia, or by twisting the trunk and sitting to one side or the other, relieving one set of muscles temporarily at the expense of the strain of the others. The photographs taken by Scudder in the public schools show admirably the faulty positions assumed as a result of fatigue and improper seating. Although these positions may be assumed without harm for a short time, yet if constantly taken a habit is developed dangerous in growing children.

With a view to allowing a change from an upright to a reclining position, Miller has constructed a chair on entirely new lines.

The back of this chair, which is at slightly more than a right angle with the seat, carries two transverse supports, a lumbar and a dorsal. Each is adjustable for height. The former can be moved forward and back as well.

The fact is recognized that improper attitudes result from fatigue and that fatigue must follow any attitude, no matter how satisfactory in itself, which is long maintained without change.

PARALYSES OF CHILDREN.

In an article on the Surgery of Paralyses of Children (*Liverpool Medico-Chirurgical Journal*, 1899, No.37,p.269) Mr. ROBERT JONES urges attention to the following:

(*a*) Where possible, the muscles should be carefully tested and the relative strength of each determined.

(*b*) All conditions due to the contraction of the plantar fascia, such as pes cavus, should be previously removed by operation.

(*c*) The operation is rarely called for when one muscle only is partially paralyzed.

(*d*) Cases in which all muscles are paralyzed, and a flail-like joint exists, are not suitable for tendon grafting. For such cases arthrodesis should be reserved.

(*e*) In selecting a healthy muscle for reinforcing a paralyzed one, it is advisable, but not essential, that the one selected should belong to the same group as the paralyzed one. The advantages are that it is nearest, and restoration of a voluntary function is thus more quickly secured. If it be practicable to obtain a reinforcing muscle from the same group, the selection should be made from a muscle the line of which is most nearly coincident with that of the paralyzed muscle.

(*f*) The reinforcing tendon should be carried as direct as possible to the paralyzed muscle, and not bent at an angle, which would have the effect of considerably lessening the transfer of power.

Bearing these points in mind, the author is of opinion that the operation which has yielded the best results in the treatment of talipes calcaneus has been that of grafting the peroneus longus and brevis to the tendo Achillis. Cases of talipes equinus will not, as a rule, call for muscle grafting, because simple division of the tendo Achillis suffices to overcome the deformity.

Cases of paralytic valgus due to paralysis of the tibialis anticus and posticus may be treated in one of the following ways: The tendon of the extensor proprius pollicis may be split and part of it attached to the tibialis anticus. Similarly a piece of the flexor longus digitorum may be attached to the tibialis posticus. Or, in place of the latter, a strip may be split off from the tendo Achillis, with muscular fibres of the gastrocnemius attached, and used to reinforce tibialis posticus. Or, still further, the peroneus longus may be brought across the front of the extensor tendon sheaths and be stitched to the tibialis anticus. The employment of the peroneus longus in this connection emphasizes an important point, that by selecting one of the opponents of a paralyzed muscle, we not only reinforce that muscle, but we weaken the antagonism which exists between the two groups, since by transferring, as in this case, the insertion of the peroneus longus from the outer to the inner border of the foot, we tend to equalize the forces acting upon those two borders. Cases of paralytic varus due to paralysis of the peronei may be treated in the following way: The peroneus longus tendon may be reinforced by a strip of the tendo Achillis and the peroneus brevis by a strip from the peroneus tertius, or one of the outermost parts of the extensor communis digitorum. In the compound forms of paralysis, considerable ingenuity can be exercised in determining which muscles shall be used as the graft.

In 1894 the author proposed arthrodesis for the treatment of flail joints, and since then the operation has steadily grown in favor with our surgeons.

It consists in opening the joint, and with a scalpel or sharp gouge peeling the *superficial area of cartilage* off the whole articulation in the case of the ankle, and gouging the bone in the case of the knee, keeping the joint completely at rest for some weeks subsequently, and for a long period fitting the limb with a simple apparatus which will enable the patient to walk without throwing a strain upon the newly-fixed joints.

A CASE OP STRANGULATED INGUINAL HERNIA IN AN INFANT AGED 10½ MONTHS; OPERATION; RECOVERY.

D'ARCY POWER (*The Lancet*, No. 3970, 1899), had under his care in the Victoria Hospital for Children, Chelsea, a case of this character. He says: Strangulation of a hernia in a young child is a rare occurrence, for the tissues are soft and are not likely to compress the bowel sufficiently to interfere with the circulation; yet from time to time numerous cases of strangulated hernia in children have been recorded, and it has been met with even during the first few days of life. In many cases partial inversion has led to a return of the bowel, though it has been necessary sometimes, to keep the patient in this position for several hours. This treatment was, first recommended by Pott It should, of course, only be employed, in cases where no very urgent symptoms are present.

At 10.30 on the evening of July 26th, a well nourished male child, aged 10½ months, was taken by his mother to the Victoria Hospital, with the history of having suddenly strained himself while coughing violently at three o'clock on the same afternoon. The child previously had been perfectly healthy, except that he had a right inguinal hernia for about six months, for which he had worn a truss. On examination the local signs were as follows: a tumor of about the size of a hen's egg, extremely tense, was found in the scrotum and inguinal region on the right side, possessing the usual signs of a strangulated hernia, with the exception that it was almost perfectly translucent. With regard to the general symptoms, the child did not appear to be in much pain; he had not vomited at all, and had taken his food as usual; the bowels had been open twice since the strangulation occurred. The pulse and temperature were normal. The pelvis and abdomen were elevated, and taxis was gently tried for about one minute, but without any favorable result. Mr. D'Arcy Power operated an hour later, eight and a half hours from the commencement of strangulation. Some clear fluid was found in the sac, and the gut was congested; the stricture which was fairly tight was situated at the neck of the sac. The bowel was returned, and an operation for radical cure was performed. There was a good deal of swelling during the next two or three days, but this disappeared within a week. The infant made a rapid and uninterrupted recovery, and was discharged on August 16th.

INFANTILE SYPHILIS.

T. HENRY JONES, M.D. (*Hot Springs Medical Journal*, 1899, viii, 257), in an exhaustive article on infantile syphilis, says, concerning the symptomatology:

If an infant in whom the disease has manifested itself before birth be born alive, the symptoms are generally very severe; the child is puny, wizened and shrivelled up, with a hoarse, feeble cry, and a poor circulation. It may develop pemphigus within a few hours of birth, generally on the palms of the hands and the soles of the feet. It survives its birth only a short time, a few days, or occasionally weeks; after death various intestinal lesions may be found, *e.g.*, gummata, or abscesses resulting therefrom in the liver, lungs, heart, etc. Even if the evidences of the disease at birth be not so marked, the progress is unfavorable.

But the child may be born apparently quite healthy, and the disease may not manifest itself until after birth; then the first symptoms may appear at any time varying from two or three weeks to seven or eight months, but generally between the second and the sixth or eighth week, rarely later. The earlier the symptoms are manifested, the more severe are the effects of the disease, and the more serious is the prognosis.

The definite symptoms are generally preceded by obscure ones, such as restlessness, fretfulness, slight feverishness, and some degree of gastro-intestinal catarrh. Dr. Eustace Smith first drew particular attention to one symptom occurring before any others, namely, obstinate wakefulness at night, with crying and fretfulness that cannot be pacified, and which he attributed to nocturnal pains in the bones, similar to those affecting adults, before the outbreak of constitutional symptoms.

The earliest definite sign of the disease is generally snuffling, resulting from inflammation of the nasal mucous membrane, which is attributed by the mother to the catching of a cold, but which, unlike an ordinary cold, persists, and grows worse instead of better. The secretion thickens, and after a time forms crusts, which obstruct the nares, and the child is compelled to breathe through his mouth, or to snuffle when breathing through his nose. When he takes the breast, the inconvenience becomes more marked, he has to desist very frequently from his sucking, in order to breathe; he probably persists in his endeavor to do the two things at once, until he is blue in the face, and then gives up the effort, perhaps with a cry. This difficulty in sucking causes him to get less nourishment than he requires, so it is a direct cause of malnutrition.

The inflammation of the nasal mucous membrane may extend to the Eustachian tube and middle ear, and result in deafness, but that is not common.

A watery, irritating discharge escapes from the nostrils, sometimes tinged with blood, which produces ulceration about the nostrils and upper lips, going on to the formation of thick scabs. Deep ulceration within the nose may follow, resulting in necrosis of the nasal bones, or perforation of the septum.

Very soon after the appearance of the nasal discharge, the characteristic skin eruption may be observed, consisting of erythematous patches, generally appearing first on the buttocks and about the genitals, which may also spread on to the thighs and abdomen, and even appear on the body, neck, and face. The eruption is at first bright red, but soon grows duller, and after a day or two, the scales formed on it desquamate and it acquires a coppery tinge; this discoloration persists for long after a syphilitic rash.

The rash is not invariably erythematous, though it is most frequently so; it may be papular, vesicular, or pustular; psoriasis also may occur, but it is more frequently seen in older children than in young infants. Syphilitic skin affections, as is well known, may simulate most skin diseases; they have some distinguishing features, however; they generally fade from bright red quickly to dull red, and leave the characteristic coppery tinge; they are not attended by any itching, they are distributed symmetrically, and various rashes may occur at the same time, and they are most commonly found on the buttocks, pudenda, and soles of the feet.

Pemphigus is a very common skin affection in this disease, and when it appears at, or soon after birth, it may be taken for granted that an infant so affected is syphilitic. The blebs are filled with purulent fluid, and when they burst they leave deep ulcers.

Mucous patches also occur as an early manifestation of inherited syphilis; they form generally at the angles of the mouth, and round the arms, though they may be met with wherever the skin is moist and in folds. They are of a grey color, irregular in shape, and slightly elevated; they give rise to a thin, offensive secretion, and ulceration often takes place in connection with them. Fissures may form at the angles of the mouth and around the arms, leaving linear cicatrices, which, when seen in older children, are very characteristic of hereditary syphilis.

Similar mucous patches occur also on the mucous membranes, especially of the mouth, fauces, and larynx; they form there dirty white elevations, which soon ulcerate. As a consequence of the laryngeal affection, the voice is altered, giving the characteristic, high-pitched, hoarse cry of the syphilitic infant.

The skin of a syphilitic child is dry, frequently scaly, pale from anemia, and the complexion is sallow and earthy; its color is often compared to that of "*café au lait.*" In a severe case the child has an old and wizened look, and the skin of the face is wrinkled and parchment-like; in a milder case he may be fairly well nourished, though always anæmic and weakly. The hair of the head and eyebrows is often thin, and may fall out.

A peculiar disease of the bones is very common in hereditary syphilis, occurring early. It consists in an epiphysitis, most often affecting the femur and the humerus, but also the tibia, bones of the forearm, ribs, metatarsal and carpal bones, as well as others. It is most easily found during life in the femur and humerus, where a thickening can be felt at the junction of the shaft and epiphysis; in post-mortem examinations upon syphilitic children this lesion is present almost without exception, and it has been shown by recent observatious that the bone affections are second only in frequency to those of the skin.

Upon examination there is found to be, in addition to the thickening near the end of the bone, a great tenderness, and a disinclination to move the affected limb; a child suffering thus may even be brought for treatment, with the complaint that he has injured a joint, when other signs of syphilis have passed unnoticed. If the inflammation be severe, it may go on to suppuration; abscesses form very quickly in children, and if not attended to at once may result in destruction of the joint within a very short time.

Syphilitic disease of the bones may also manifest itself at later stages in a variety of forms. Caries of the nasal bones often follows ulceration of the mucous membrane, in consequence of which the bridge of the nose falls in, giving the typical flattened, bridgeless nose so often met with. Caries of the hard palate is not at all uncommon, giving rise to a greater or lesser degree of cleft-palate. Periosteal nodes may form in various bones, and may be followed by caries; syphilitic bosses may form on the bones of the skull, along the lines of the sutures; and gummatous nodes may form in the shafts of long bones. Gummata are also frequently met with in the muscles, tendons, and subcutaneous tissues.

Joint lesions sometimes occur as late manifestations, but they are not common; a syphilitic synovitis of the knee-joint has been described.

Enlargemant of the lymphatic glands is common, particularly of those at the back of the neck, but it is not so frequently met with in congenital as in acquired syphilis. The spleen is frequently enlarged and indurated; enlargement of the liver may occur, but is not characteristic. Gummata may be found after death in the liver, spleen and lungs, not only as manifestations of tertiary syphilis, but even in newly-born infants.

The peculiar malformation of teeth of syphilitic children, affecting the upper incisors of the permanent set, and leaving them peg-shaped, grooved, and stunted, is well known, and need only be mentioned, as it does not strictly come under the head of infantile syphilis. The first teeth are cut early, and are very liable to decay.

Other manifestations of tertiary syphilis are eye affections; interstitial keratitis, beginning with steaminess of the cornea, and affecting both eyes, choroiditis and iritis. Such changes when found are most characteristic of hereditary syphilis. Gummata of the brain may form, but are rare in children, giving rise to nervous symptoms amenable to specific treatment.

TUBERCLE BACILLI IN THE MILK OF TUBERCULOUS COWS.

Wright (*Boston Medical and Surgical Journal*, 1899, cxli, No. xii, 289), says: The bacteriological examination of milk for tubercle bacilli has given varying results in the hands of different bacteriologists. Thus, among others, Obermüller found the bacilli in 61 per cent. of the samples of milk sold in Berlin, while Petri only found them in 14 per cent.

The question of the frequency of the occurrence of tubercle bacilli in milk, and of the value of the tuberculin reaction as indicating the probable presence of tuberculin bacilli in the milk, has been investigated by Lydia Rabinowitsch and Walter Kempner (*Zeitschrift für Hygiene and Infectionskrankheiten*, Bd. xxxi, Heft 1, May 26, 1899), in the Institute for Infectious Diseases, and in the Pathological Institute of the Veterinary High School of Berlin. Ot 25 samples of milk from various sources, 7 or 28 per cent. contained tubercle bacilli.

As to the frequency of the occurrence of the bacilli in the milk of cows known or suspected to be tuberculous, there are wide differences in the results of various investigators. Thus Nocard found them in the milk in only 5.5 per cent. of the cows, H.C. Ernest, of Boston, in 28.6 per cent., and Hirschberger in 55 per cent.

There seems to be a general agreement that the milk of cows, with well-marked tuberculosis, is very apt to contain tubercle bacilli, and that such milk should not be used without sterilizaiion. On the other hand, there is much difference of opinion as to the infectiousness of the milk of cows with only slight tubercular lesions, and without apparent disease of the udder, and of cows which react to tuberculin, without clinical signs of tuberculosis. Rabinowitsch and Kempner examined the milk of 15 cows, which had reacted to tuberculin. In the milk of 10 of them, or 67 per cent., they found tubercle bacilli.

Of the 10 positive cases, there was tuberculosis of the udder in only two. In three there were no definite clinical signs of tuberculosis, and in one only very early pulmonary lesions. The remainder were more or less extensively affected by the disease.

The authors conclude from their study that the milk of apparently healthy cows, which react to tuberculin, or of cows in the early stage of tuberculosis, without involvement of the udder, may contain tubercle bacilli. Although the number of observations was small, they think they are justified in the opinion that the milk of cows which react to tuberculin should be regarded the same as milk from frankly tuberculous cows, and that the surest way to keep a milk supply free from tubercle bacilli is by the use of the tuberculin test.

TYPHOID FEVER IN CHILDREN

In an exhaustive article on the treatment of typhoid fever, H. A. Hare (*American Medical Quarterly*, 1899, i., 9), states that typhoid fever in children is by no means as rare as has been supposed. While the earlier years of life seem to be blessed with a relative immunity to the disease, there is no doubt that it often occurs in a mild form, and is not correctly diagnosticated. A young child sickens, has fever, is wretched, has moderate diarrhea or constipation, and a coated tongue. Debility is rapidly developed, the stomach becomes irritable, and the fever is persistent, even though it is not high. After an illness lasting for from a few days to several weeks, the child gradually recovers, and the diagnosis originally adhered to, namely, that the case has been one of simple catarrhal fever. As was pointed out by Liebermeister years ago, typhoid fever may occur, even in adults, with these mild symptoms, and be called catarrhal fever. It may be laid down, however, as a rule, that the younger the child, the less likely it is to have enteric fever, and that the prognosis is usually favorable if the child be young. On the other hand, it is only fair to state that Rocaz (*Annales de la Polyclinique de Bordeaux*, 1897), believed that while the duration of the fever in children was shorter than in adults, the fever itself was apt to be excessive; that the prognosis is grave under three years, less grave at four years, and only less grave than in adults when the child is about five years of age.

The author thinks, after an examination of the literature, that it is fair to conclude that Taupin's assertion in 1839, that typhoid fever is not a rare disease in children is correct. At the present time the diagnosis of typhoid fever in children must rest largely upon the chance development of the characteristic rash and enlarged spleen, and more than all upon the Widal test, for the moderation in all the symptoms, so characteristic of the affection in childhood, and the fact that a swollen spleen and liver and a coated tongue with fever, are so commonly met with in various children's ailments, make an absolute diagnosis in many instances without this test, almost impossible.

PREPARATION OF GLYCERINATED VACCINE VIRUS.

WALLACE (*Brooklyn Medical Journal*, 1899, xiii, 621), in describing a visit to a laboratory, for the preparation of glycerinated vaccine virus, says: For the purpose of making vaccine, heifers three to six months of age are selected, and are isolated for observation for at least a week. Young animals are chosen, for the reason that their skin is finer and more delicate, and also because they are much easier to handle. When an inoculation is to be performed, the calf is led into the operating-room, strapped to the tilting-table, and in a few moments is ready for the operation. The hair is cut very close over the abdomen and upper femoral regions, and the skin is then very carefully shaven, and scrubbed with soap and water.

All but the prepared portion of the animal is covered with clean sheet and towels, and then with a sterile scarifier, a large number of abrasions are made over the bared area. These scarifications are probably an inch to an inch and a half long by an inch wide, and reaching down to the rete Malpighi, just so as not to draw blood. At least one hundred to one hundred and twenty of these are made. The inoculation of a sterile glycerine virus is made, avoiding the reproduction of extraneous organisms, as always occurs where the virus is carried from animal to animal by large points or spades, as they are called. Shortly after the spots are thoroughly impregnated, the calf is returned to the stable. For the next four or five days, or until the vesicles are well formed, the calf is apparently well, and, apart from an occasional elevation of temperature (rarely exceeding one degree), has a good appetite, and acts perfectly well. By the fourth or fifth day, as stated before, this virus is collected.

The calf is brought again to the operating-room, and placed upon the table.

Vesicles were formed along the course of all the lines and cross lines of the scarifications. Here and there, between the scarifications, could be seen isolated and typical umbilicated vesicles. Sometimes the inguinal glands were found enlarged, but there was no pus visible to the naked eye. With a sterile "Volkmann" sharp spoon, the vesicular growth was removed from all the scarifications and placed in a sterile jar. This pulp was found to contain streptococci and staphylococci.

After all available serum is collected, the calf is released from the table and returned to the stable, where it remains for several days. Later, the calf is allowed the freedom of the corral, and by the end of two weeks is sent home to its owner, in prime condition, having spent about four weeks at the vaccine farm.

The further history of the pulp is this: It is weighed, thoroughly triturated with a certain quantity of glycerin, placed in a sterile culture-tube, sealed and stored in a refrigerator. A culture of this glycerinated virus on agar, in a Petri dish, shows numerous colonies, as said before, of pus-organisms. At the end of the week, the number of colonies is found to be less, so that by the end of a month, the material is found to be sterile, showing the germicidal and preservative action of glycerin.

A CASE OF PHTHISIS RENUM.

J. Friedjung (*Archiv für Kinderheilkunde*, 1898, xxv., 357) says that this affection is rare in childhood, but is certainly also frequently overlooked. The latter occurred in this case: The patient was admitted to the hospital, with a diagnosis of chronic nephritis, after having suffered for years, although a spondylitis which was present, one would think, gave a hint for examination in a different direction. The girl, 7 years of age, was admitted Sept. 23rd.

History.—The patient is said to have been healthy up to two years ago. At that time she acquired scarlet fever, during which nephritis made its appearance. Since then the child has been ill. About 1½ years ago, an angular kyphosis made its appearance in the upper portion of the chest. The child complains of a severe pain in the abdomen for months, headache, fever, violent thirst, anorexia, occasionally vomiting; the bowels are regular, the urine not much diminished.

Present State.—Temp. 37.1°; pulse regular (108); the artery is only partly filled, tension slight, respiration is regular, costo-abdominal. The patient is poorly nourished and poorly developed; weighs 11 kg. Facial expression denotes suffering, exhaustion; the eyes are heavy, partially closed. The skin is of a dirty brown tint, passing into gray, devoid of fat, dry. The muscular system is poorly developed, bony system slender, eyes sunken, tongue covered with a whitish coat. The glands of the neck, and in the inguinal regions are somewhat enlarged, hard. Epigastric angle, about 90°. Lungs, normal. Area of cardiac dullness, not increased; heart sounds low, clear. The abdomen is soft, somewhat retracted. The spleen extends about 3 cm. below the arch of the ribs, is plump, fairly firm. When deep palpation is made in the hypogastrium, hard resisting bodies are felt the size of a bean; these are painless. A gibbus of the upper spinal column of the thorax is present. Constipation. Urine clear, the amount for 24 hours is normal, reaction acid, contains a large quantity of albumin; sediment, large quantity of lymph-corpuscles, red blood corpuscles in somewhat smaller quantities; tubercle-bacilli absent.

Sept. 27th.—Temp., 36.3°; respiration, 56, shallow. In the right side behind there is a dulled-tympanitic percussion; over both scapulæ, bronchial breathing. Only a little nourishment is taken. The child died towards evening, with increased cyanosis and dyspnœa.

Post-Mortem.—Phthisis renum, tuberculosis of the upper portions of ureters. Spondylitis tuberculosa. Enlargement of the bronchial and mesenteric lymphatic glands. Lobular pneumonia of both sides. Fatty liver. The first official diagnosis had been: Spondylitis tuberculosa, tabes mesenterica, amyloid kidneys, spleen and liver (perhaps fatty liver). The urine, as well as the condition of the heart, spoke against chronic nephritis. The constant presence of abundant pus corpuscles and intact erythrocytes in the urine, however, militated somewhat against the diagnosis of the amyloid condition of the organs alone, and as caries of the spine was present, the diagnosis of tuberculosis had to be made, not positively, however, on account of the absence in the urine of the tubercle bacillus; the suspicion of anyloid degeneration was upheld by the presence of the hard spleen, and the etiological factor of the spondylitis.

It is interesting to note that an attack of scarlatina, with nephritis, preceded this condition. The physician in charge was satisfied with the diagnosis of chronic nephritis on this account. (May this mistake not be made frequently?) The scarlatinal nephritis had, at all events, predisposed the soil for the tubercle bacilli, forming a locus minoris resistentiae.

ERGOT IN CHRONIC MALARIA.

Jacobi (*St. Louis Medical Era, '99, ix, p. 37*), after reporting several cases of chronic malaria, selected at random, in which he used a reliable preparation of ergot, sums up his experience in the following conclusions:

1.—There are cases of chronic intermittent fevers with large tumefaction of the spleen that, after having resisted the action of quinine, arsenic, methylene-blue, eucalyptus, and piperin, are benefited by ergot.

2.—When enlargement of the spleen is not old and not firmly established, the contracting effect of ergot is noticed within a reasonable time.

3.—The attacks will disappear before that diminution in the size of the spleen is very marked.

4.—Though temperatures, after the employment of ergot, remain irregular, and now and then somewhat elevated, chills, as a rule, are not noticed with this elevation.

5.—Plasmodia do not seem to disappear from the blood so rapidly as they do after quinine, when the latter is effective. But even while some are still present, the attacks being more or less under control, the patient will feel better.

6.—Complicating local pain requires additional treatment with ice, or cold douches, or heat. Chronic hyperplasia demands iodide of potassium, iodide of iron. Digestive disorders may indicate, as they often do when quinine is expected to act before the employment of ergot, an emetic, or a purgative, or stomachics.

7.—An experience extending over forty years, in which the author used ergot in many instances, justifies him in asserting at least this much: that there are many cases of chronic malaria, apparently intractable, that will get well with ergot.

8.—There are cases occasionally in which the return of elevations of temperature after the successful use of ergot makes the combination of ergot and quinine, or ergot and arsenic, advisable, though quinine and arsenic were not successful previously.

9.—Ergot, like quinine, probably by its sudden contracting effect on the spleen, and the forcing of large quantities of plasmodia-laden blood into the circulation, in chronic malaria when hydremia and spleen tumor are excessive, is capable of bringing on the very first attacks of chills and fever.

10.—Recent cases of malaria have got better or were improved under the extensive use of ergot, but many resisted a long time. That is why acute cases should rather be treated with quinine.

IMPERFORATE ANUS.

Castan (*Revue Mensuelle des Maladies de l' Enfance*, 1899) reports a case which he operated on successfully four days after birth. The child had passed no meconium and refused obstinately to nurse. Two days after birth it vomited at different times matter of fecal odor and appearance. There was marked edema of the extremities, scrotum, and penis. The abdomen was distended, lean, and tender. Examination of the anus showed it to be imperforate despite its normal appearance.

The child's color was earthy and slightly jaundiced; pulse regular and strong. The finger entered the anal cul-de-sac for about a centimeter. There was no impulse when the infant cried.

Under chloroform narcosis an incision was made, involving the anus, but not reaching the anterior commissure, and prolonged behind and above for about 5 centimeters. The coccyx was detached with scissors. No cord was found uniting the two pouches. After some dissection the lower end of the rectal ampulla was made out about 4 centimeters from the anus.

It resisted attempts to pull it down with the forceps and the danger of rupturing caused abandonment of the attempt. It was carefully freed, when it was found that a tense cord on either side caused the resistance. These cords turned out to be the levatores ani. Their division removed the difficulty. The gut was then fixed and opened. The wound and the intestine were copiously irrigated with boiled water. The belly went down immediately. Final cleansing with peroxide and dressing. The operation was hardly completed when the infant took the breast ravenously. There was healing by first intention and the functional result was excellent.

The author calls attention to the long time which elapsed before operation and cautions against delay in these cases. Peritonitis is rare, probably because of the scarcity of germs in the intestinal contents before the ingestion of food. Kirmisson cites as rare a case of spontaneous rupture of the gut.

Lack of food has but small influence in causing death in these cases, but it would seem that auto-intoxication from the retention of organic waste materials, the stagnation of meconium and bile might do so.

The classic opinion seems to be that the surgeon should push the dissection as far as possible, that he must have light even if resection of the coccyx is required.

The posterior incision after resection of coccyx gives plenty of light, especially since the flexibility of the skeleton permits some separation of the sacrum in addition. If necessary the sacrum may be resected to the fourth vertebra.

The author chooses this route for fear of injuring the uretha, which is in great danger when the dissection is deep. The coccyx, too, is low down at birth. In his case it touched the posterior commissure. If the incision had been entirely in the perineum, to get 4 centimeters up he would have had to work in a very narrow opening at the bottom of which he would have great difficulty in making out anything.

Besides the urethra, the bladder and the vagina have been wounded, and the peritoneum opened, as at this age the latter sometimes reaches to the base of the prostate.

Finally the rectum is in immediate relation with the posterior wall of the pelvis; it is therefore reached more quickly, and even when it is situated very high one may still hope to reach it. Then the bladder and vagina take its place in the same cavity. The large opening made allows us to see with what organ we are dealing and to push it out of the way, if it is not the rectum.

A maximum of light and a minimum of risk for the pelvic structures and immediate attainment of a high level, seem to be the advantages of the posterior route. But, further, as to ultimate function; complete division of the sphincter, despite the immediate union, which we ought to look for, is always liable to cause a incontinence.

The author then proposes the following operation, which he has practiced on the cadaver with considerable ease. Incision starting from the posterior commissure without involving it, deliberate resection of the coccyx by two lateral cuts, passing close to its edges, freeing and lowering of the intestine. Then a forceps is used to push in the anal cul-de-sac, which is incised high up on the opened blades. The outside of the forceps pushes back the sphincter and dilates it. The intestine is then drawn through the button-hole; classic sutures after freshening the edges of the anal wound. In case of absence of the anal infundibulum it is possible to make one in the normal position by folding in the skin. After fixing the intestine and opening it, he thoroughly washes the wound with boiled water and irrigates the rectum and inserts a tube the outer end of which leads through the dressing.

The author thinks that by prolonging the incision in a direction parallel with the sacrum or even resecting a part of it, the operation of Little can always be avoided. This latter operation is grave in that it opens the peritoneum and is always provisional.

TRAUMATIC NERVOUS DISEASES IN CHILDREN.

SCHUSTER and MENDEL (*Monatschr. für Unfallheilkunde*, 177) find that in Mendel's clinic during the last few years there have been fifty-three cases of hysteria in children, namely, thirty-five girls and eighteen boys. Among this number in only five cases could any connection be traced between any bodily injury and the onset of the disease. All the five cases occurred in girls between the ages of nine and thirteen, and only in one of them could any hereditary predisposition be found. Under treatment three recovered, the other two remaining unimproved.—*Medical Review.*

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ORIGINAL ARTICLES*

THE THERAPEUTICS OF PERTUSSIS.

By G. J. KAUMHEIMER, M.D.,
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THERE is probably no infectious disease which is looked upon with more indifference by the laity, and is oftener allowed to go untreated, than "only the whooping-cough." And yet it was stated at a recent discussion in London that this disease with its complications and sequelæ stood third in the list of fatalities caused by all diseases, while Stephenson and Murphy state that its mortality for the fifty years preceding the publication of their text-book on hygiene, was greater than that from both scarlet fever and diphtheria.

Its protracted course, the exhaustion induced by the violent fits of coughing and the resultant vomiting, the frequent occurrence of pulmonary and other complications, all combine to render it one of the most formidable of our infectious diseases.

There can hardly be any doubt that this indifference is due in a great measure to a widespread opinion among the laity, which is that medication is futile, and that we possess no therapeutic resources that will enable us to cut short its duration, or ameliorate the severity of its symptoms.

Of hardly any other infectious disease is the trite saying, "the curability of a disease is in an inverse ratio to the number of remedies proposed for its relief," so true. With the widely varying ideas held of its causation, and the seat and nature of the morbid changes, there is found just as wide a divergence in therapeutic views. While one set of observers devotes its energies to local applications to the nose, another claims that the larynx is the true battle-ground. Still others attack the disease by systemic remedies with the same contradiction as to the physiological action of the remedies required, some using sedatives, others antiseptics, all claiming remarkable results.

The varying duration and intensity of the disease in different places and during different epidemics render it difficult to properly estimate the value of our remedies. While a complete review of the measures proposed for the relief of this disease would take up much more time than can be allotted to this paper, a few minutes may be profitably spent in running over the various drugs for which observers claim successful results.

Local treatment and the variety of drugs applied seem to be limited only by the number of observers reporting results. Powdered benzoin, salicylate of bismuth, quinin in various strengths, cocain, resorcin, thymol, silver nitrate, boric acid with ground coffee and sozoidol-sodium have been blown into the nose, while douching and spraying have been practiced with solutions of bichloride of mercury, salicylates, citric acid, cocain, peroxide of hydrogen, and other soluble antiseptics and sedatives.

My personal experience with these measures has been slight. In the early part of my practice I attempted to use them to some extent, but soon found that the little patients strongly objected, so that it was almost impossible to properly apply them, or to induce the parents to continue them for a sufficient time to obtain results.

While the drugs employed vary widely, the reports are sufficiently uniform to justify the statement that where they can be properly applied we may expect great benefit from local applications of antiseptics, either in powder or solution, to the nose or nasopharynx.

This is verified by the success obtained by inhalations, which can be employed without arousing the hostility of our little patients. Carbolic acid and its congeners, cresol, creosote, and resorcin, employed in this form enjoy a deserved reputation. A solution of medium strength may be kept boiling in the room, so as to impregnate the air, or may be sprinkled around the room at intervals. Tar, menthol, thymol, turpentine, benzol, or oil of eucalyptus, may be similarly used, a small quantity sprinkled on the pillows furnishing a complete antiseptic inhalation at night. Resorcin must be vaporized by being sprinkled on a warm metal plate, about fifteen grains being used every two hours. Naphthalin, the ordinary moth-ball of the drug store, may be used in the same way, and I have found it of decided benefit. Another way of using the same drug is to put several balls of it in a bag hung around the child's neck. The only objection to this drug is its odor. Allied to this is the inhalation of illuminating gas, a gas-jet being opened just sufficiently to give a distinct odor of gas to the air of the room. For obvious reasons this is only available during the hours of day-light. Twenty years ago, or less, a sojourn in the purifying room of the gas-works was a favorite domestic remedy in Milwaukee, and decided improvement was claimed for its use.

The beneficial effect of coal gas is probably due to the naphthalin in it, to which the name of albo-carbon is given.

The great trouble I have found in using such drugs as quinin, resorcin, and in fact all the dry antiseptics which are used, is that it is almost impossible for children of less than 8 or 10 years to use them more than once without getting into a fight. It requires two or three adults to administer them, and the struggle is more harmful to the child than the disease.

Inhalations of formaldehyde gas have been lately used with beneficial results, as regards duration and intensity of the disease, by Hinman of Atlanta, Oliphant of New Orleans, and others. A diluted solution may be sprayed into the atmosphere, in the neighborhood of the patient. I may state, however, that many persons are very sensitive to the presence of this gas, even small quantities in the air of a room producing lachrymation, burning in the nose, and an irritative cough. Rosenberg has used this drug in the shape of a solution in methyl-alcohol, which has been named holzinol.

Bromoform has also been used this way, either by allowing small quantities to evaporate from a plate over which the child holds its head, or in combination with oxygen, bromid of camphor, and cherry-laurel water, by Lacroix, Dutremblay, and Croyon, of Paris. About forty-eight quarts of oxygen are given daily, in four or more doses, with ten grams (⅓ oz.) each of the other ingredients in a special apparatus.

The use of sulphurous acid, obtained by burning about a teaspoonful of sulphur in a closed room, morning and evening, was highly lauded by several observers during a discussion in one of the London medical societies a few years ago.

The treatment of the catarrhal stage hardly differs from that of the convulsive period. If we can recognize the disease thus early, or if we can obtain a distinct history of exposure, the treatment proper for the convulsive stage should be employed, though perhaps not so heroically.

Probably the remedy most popular until lately has been belladonna. Jacobi has great confidence in it, but states that it must be given until toxic symptoms, such as erythema, appear after each dose, dilation or the pupil being no index of its beneficial action. This alone would seem to preclude its employment in private practice, as in such doses its administration could hardly be trusted to an inexperienced person. Two cases in which I tried to follow this advice promptly showed distressing symptoms, which compelled the discontinuance of the drug. Almost every text-book recommends the employment of this drug, but not in such heroic doses. Most writers combine other remedies with it, such as guaicol, bromids or antipyrin. There can be no doubt that relief is obtained after a time by its use, but the duration of the disease is not much shortened, nor is any value claimed for it before the spasmodic stage is well developed. Eross, in an analysis of 874 cases, found belladonna the least useful of the drugs, employed.

Quinin is highly lauded by a number of observers, among them Strümpell, Loomis and Norman Bridge. G. Theodore Fischer states that in sixteen cases this drug reduced them to a simple bronchitis, in an average of thirteen days. He gives it in very large doses, one centig. (⅙ gr.) for each month, one decig. (1 ⅔ grs.) for each year of age, never exceeding 6 ⅔ grs. three times daily. This, in my opinion, is heroic medication, aud requires a very complete confidence in the remedy, as in these doses it is certainly not an indifferent remedy.

The alkaline bromids, to which we would naturally turn, from their action as anti-spasmodics, do not seem to have fulfilled expectations, although they have some enthusiastic champions. Like all other remedies recommended for this disease, they must be given with an unsparing hand, nothing short of saturation with the drug selected seeming to be of value.

The coal-tar products, chief among them antipyrin, or its salts, have been liberally used of late years. Owing to their well-known depressant action they must be guarded by heart-stimulants, and their action carefully watched. A number of prominent observers recommend antipyrin very highly, while it is generally stated that the other coal-tar products, such as acetanilid or phenacetin, are not nearly so effective. Whitaker says that there can be no doubt that antipyrin prolongs the interval, and mitigates the severity of the disease. Koplik and Knight recommend it in doses of one grain for each year, with a maximum of five grains, together with tincture of digitalis, one minim per year, and a maximum dose of four minims.

Eross, in the work already referred to, states that antipyrin is extremely valuable. It is also strongly commended by Soula and Marfan, Sonnenberger, J. Madison Taylor, and others, while Rehn, of Frankfort, pins his faith to tussol, a salt of antipyrin and mandelic acid, in about half the dose given above. Antipyrin, especially since its excessive price has been reduced by the expiration of the patent upon it, certainly deserves a trial in this affection.

Welles and Carre, from a theoretical and practical consideration of this disease, arrive at the conclusion that cocain, administered internally, is the true physiological antidote to the pathological process. They have administered the drug in over 300 cases, and claim remarkable results, having seen no bad effects, and noting improvement in almost every case. The average duration of the disease was three weeks, and they say, "indeed it seems as if pertussis may be made to abort in many of the simpler cases, if the patient is seen and treated early." They give the drug in a watery solution, based on an adult dose of one grain three or four times a day. They claim that the beneficial results of local applications of cocain are in direct proportion to the amount absorbed or swallowed.

Cavalieri reports that in a series of over 200 cases he found almost all measures futile, so that he vaccinated over 100 of the children, a vesicle resulting in 64. Of these 64, but one, a baby of four months died, whereas before numerous deaths had occurred. He claims that vaccination diminished the number of paroxysms and shortened the course to three or three and one-half weeks.

To borrow an expression from the daily press, "This is important if true." It would enable us to kill two birds with one stone, and to circumvent the "conscientious objector." Cochazko reports similar good results.

The latest addition to our armamentarium, and the one with which I have had the greatest experience, and obtained the most favorable results, is bromoform. It was first used about ten years ago by Shepp, of Munich, who reported seventy cases in which improvement took place within a few days, and which were cured in three weeks. Loewenthal, from Senator's clinic, reports that in 100 cases the attacks became milder in a few days, but that relapse will occur if the remedy be stopped too soon. In one case narcosis resulted from an overdose, but the child soon recovered. Fiscner, of New York, found the duration in fifty-one cases to be from ten to thirty days, and believes that it will cure 75 per cent. of all uncomplicated cases. Neumann, of Berlin, believes that while it greatly ameliorates the disease, it has no real curative action, but has never seen bad effects. Ferreira states that it will cure the disease in three to six days, but the opinion may be due to the general mildness of the epidemic, as no one else has quite such an optimistic view of the drug. F. W. Burton Fanning, who reports thirty cases in the discussion in London already referred to, expresses a very favorable opinion, and believes it combines the action of a nerve-sedative and an antiseptic. Others reporting similar results to those given above are Hirsch, Nauwelærs, Cassell, Eross, who found it to act better than any other drug tried in his series of 874 cases, and states that beneficial results were observed in 48 to 72 hours, Pellicer, P. J. Eaton, S. G. Burnett, and a number of others. Ullman, who considered it a light narcotic, is not so favorably impressed with it.

My personal experience with it extends over forty cases, ranging from four months to ten years of age, and of all grades of severity. In all the cases from which I heard, there was a good effect, the paroxysms diminishing in violence and frequency, vomiting and epistaxis ceasing, and sleep being undisturbed. I am unable to give exact statistics, as many parents were content with the improvement of the symptoms, and I did not see the patients till some months later, when exact data were difficult to obtain. No unfavorable effect was produced, except a burning in the throat and stomach, due to an imperfect method of administration at first adopted.

Bromoform is a colorless, heavy, volatile liquid, with an odor and taste similar to that of chloroform. Its chemical composition is $CHBr_3$, and its specific gravity is 2.904, a Troy ounce measuring scarcely three fluid drams. It is soluble in alcohol and ether, but very slightly so in water. Chemically it is quite stable, but, until its affinities are better known, should be given only with indifferent drugs. Owing to its great specific gravity, and the fact that there is no settled practice among the pharmacists of this country in regard to dispensing by weight or measure, it is the safest to prescribe it by drops. A fluid dram contains 480 drops; a dram by weight 160 drops. The dose is one drop for each year of age, given from three to five times a day, according to the severity of the disease and the effect produced. Indeed, it is my practice to prescribe only three-fourths of the quantity required to give the indicated dose per teaspoonful until I have tested the susceptibility of my patient, when the dose can be increased, if necessary. If the dose is too large, stupor will set in. When I first began to use it, I ordered it given dropped in sweetened water. Given in this way, contact of the large drops with the mucous membrane was painful. Since I began giving it in a mucilaginous or syrupy mixture, or an emulsion, I have heard no complaint. It may be given in syrup of acacia, or with mucilage of acacia, or tragacanth, or with an emulsion of cod-liver oil, the latter being particularly adapted to debilitated children. The parents should be thoroughly impressed with the necessity of shaking the bottle before pouring out the dose, as unpleasant symptoms have been caused by the last doses containing much more of the drug than the previous one. As previously stated, it can also be administered by inhalation. Bromoform is not to be classed among the indifferent drugs. A number of cases of intoxication have been reported from the administration of overdoses. Fischer reports the case of a child, two and one-half years old, who received forty drops at one dose in a mixture. Cheney saw a child of three years who showed symptoms of poisoning after receiving the last dose in the bottle. In both cases there was laughing intoxication, followed by vomiting and coma. Recovery ensued after emetics and strychnia.

Czygan reports the case of a child of two and one-half years, who, upon taking between five and seven grams, passed into a deep coma, which persisted after the injection of ether, cutaneous stimulation, and artificial respiration. The injection of tincture of nux vomica (1.50 gms.) in the course of an hour restored the reflexes, after which the application of faradism put the child out of danger in five hours. Müller reports a fatal case, that of a child of two, who swallowed about four grams (60 grs.) A few minutes later the child appeared intoxicated, and following the administration of lukewarm water and tickling the pharynx, vomited. Soon it fell into a deep slumber, broken by repeated convulsions, beginning with a respiratory spasm and cyanosis of the face. A copious supply of milk was at once administered. Two hours after the child was in a state of collapse, with hardly perceptible breathing, cyanotic face, fluttering pulse, contracted pupils, with absence of light reaction, cold hands, and paralyzed muscles. Death occurred in about five hours from ingestion of dose with respiratory and cardiac paralysis. The characteristic clinical picture is that of asphyxia, and undoubtedly caused by the action of the blood, poisoned by the bromoform, upon the respiratory center. *Post mortem* revealed pupils cqual and of medium size. The stomach contained some food particles, which had a faint odor of $C H Br_3$. There were only a few slight hemorrhagic spots and slight congestion of the mucous membrane without loss of epithelium. The duodenum and upper half of jejunum had a strong odor of bromoform, mucous membrane was injected, solitary glands and Peyer's patches intensely swollen, and upper part of jejunum already reddened. Further along reddening was less marked, the outer coat was grayish, and the mucous membrane pale. Liver normal in size, upper surface was bluish-red, and a few hemorrhagic spots were seen in left lobe. Cross section revealed a glistening bluish-red surface, from which exuded profusely thin, dark blood. Kidneys large, brownish-red, glistening and sanguineous. The fluidity of the blood was a striking feature. Epithelium of the epiglottis was reddened, and there was a greyish-red mucus in the trachea.

Tongue pale. A few hemorrhagic spots, the size of a mustard seed, on lower lobe of left lung, under the pleura. Surface was dark bluish-red; cross section cherry. On pressure there exuded from the bronchi a copious whitish mucus. The mucous membrane of the bronchi was markedly injected. Veins of dura contained very thin, dark, fluid blood. Vessels of pia similarly filled and highly injected. Brain substance showed numerous hemorrhages, was wet and succulent. Chemical examination of different portions of the body revealed the presence of bromoform in varying quantities; from stomach, intestines and contents 1.165 grains bromoform were obtained. Also present in blood and other organs, but not in measurable quantity. As only a small portion of the organs was taken, it is evident that $C\,H\cdot Br_3$ had accumulated in the body in large quantities. The important points were the thinness and dark-red color of the blood, and marked injection of the brain and meninges.

I have incorporated this case in detail because it is the only fatal case that I could find any record of. It will be seen that the margin between the efficient and the poisonous dose is great, so that deleterious results can hardly follow its administration without great blundering somewhere. I would urge upon all members of this Society to give the drug a trial, as I believe it to be the most satisfactory agent for combating the ravages of this malady.

In severe and obstinate cases, where the demand for relief is imperative, the administration of opium, hyoscyamus, conium, chloral, or other narcotics, until some physiological effect is produced, may be needed, or we may resort to the inhalation of chloform or ether during the paroxysms.

In addition to the lists of drugs spoken of, I have accumulated a list of forty-three other remedies for this disease, ranging from the administration of carbolic acid, mercurials, or a vast list of drugs by the mouth, to the insufflation of CO_2 per rectum. Among local mechanical measures, galvanism, compression of the vagus, lifting of the hyoid bone, cold baths, intubation of the larynx, and very hot poultices, may be mentioned, while one case is reported to have recovered after the injection of antitoxin for an intercurrent attack of diphtheria.

Is it any wonder that the practitioner, bewildered by the rival claims of enthusiasts, becomes sceptical ?

The question of rest in bed has recently been discussed by W. W. Johnston, who adverts to the great strain put upon the circulatory apparatus during the paroxysms, and insists that the rest in bed not only saves the heart and vessels during the coughing spells, but reduces their labor in the interval. He also claims that the cold air aggravates the existing catarrhal condition. There is one drawback, however, in the average family, and that is, that the youngsters demand to be amused and entertained while free from cough, which interferes so much with the domestic arrangements, where several children are affected, and at most one servant is kept, that parents surreptitiously violate our injunctions. In case the patient is confined to his room or bed, free ventilation should be secured without draught. In all, except very severe cases, I believe that benefit is derived from a sojourn in the open air. Even on cold days, except when damp, raw, or muggy, the good more than counterbalances the possibility of harm from exposure. The clothing should be warm, but not tight or heavy.

The diet should be easily digestible and nutritious, avoiding heavy meats and excess of sweets. The child should be fed often and in small quantities, and it is often of advantage to give small quantities of food soon after vomiting. The bowels and skin should be attended to, and exposure to irritating vapors, such as tobacco smoke, or smoke of frying grease should be avoided.

The treatment of the stage of deferescence should be tonic, and directed to the cure of any sequel or complication. cod-liver oil, syrup iodide of iron and the hypophosphites all have their place here.

In order to apply the ounce of prevention, we must use our best endeavors to educate the public so that pertussis be made a notifiable disease, to the extent that no children from an infected house can be admitted to school. Weil placed eight children in the convulsive state among 100 others in a ward, and none of the latter contracted the disease. This, he claims, proves that it is only infective in the catarrhal stage. Whether the patient will infect others in the later stages or not, he should not be allowed to scatter the disease broadcast.

My thanks are due Mr. Leo. C. Urban, of Milwaukee, for aid in procuring some of the pharmaceutical data.

CEREBRO-SPINAL MENINGITIS IN COLORADO.

By Dr. George H. Cattermole,
Professor of Diseases of Children, University of Colorado, Boulder, Colo.

DURING the spring and early summer of the present year cerebro-spinal meningitis has been prevalent among children in the central counties of the State. From reports I judge the disease has been almost epidemic in Denver. In that city some confusion as to the nature of the disease arose from the supposed resemblance it had to hydrophobia. One patient, in the last stages of pulmonary turberculosis, developed symptoms which resembled both meningitis and hydrophobia. He had been bitten by a dog some weeks before, and so credence was given to the hydrophobia theory. This started the report that the cases were hydrophobia.

In the city of Boulder two little children in the same family were attacked almost simultaneously in April. One died in 23 hours and the other in 42 hours. When first seen by a physician the children were not confined to bed; they seemed pleased to see "their doctor," but made repeated attempts to bite him.

The next case in Boulder was in a girl of 9 years, who recovered after a five-weeks' illness from well defined cerebro-spinal meningitis.

About this same time several cases of ill-defined disease occurred in the mining camp of Gold Hill, Boulder County. It was at first thought to be masked scarlet fever, but several of the cases died with well marked cerebral symptoms, and it was a question whether they were not cases of meningitis.

In the mountain town of Ward, a baby girl, aged 20 months, was taken sick on the evening of April 29, with vomiting, pain in the head, and some fever. The following day the child seemed better, but on the third day she was not so well; the headache seemed more severe. The afternoon of the fourth day she seemed better again, but that same evening she grew much worse, and at this time I was called to see her. I arrived about 1 o'clock at night, she then lay in a stupor, but could be aroused. The temperature in the rectum was 103.2; the pulse was 80, weak and irregular; respiration was 60, and of Cheyne-Stokes' form. The head was retracted and the muscles of the neck were rigid. There was internal squint in the left eye. The right arm was held motionless; the hand and arm were somewhat swollen, and when touched caused her to cry out as though in pain. She did not recognize her mother. She refused to take anything by the mouth although the tongue was dry.

Ice-cold cloths were applied to the head and mustard poultices along the spine. About 3 A. M. she seemed dying. Pulse and respiration were hardly perceptible. We succeeded in getting some whisky and water and a small dose of belladonna into the stomach. Her condition improved a little, but seemed so hopeless that we decided to try anti-streptococcic serum. There was no evidence of pneumonia, so we thought the specific cause might as likely be the streptococcus as the pnumococcus.

At 1 o'clock on the fifth day of the sickness we gave her 2 c.c. of the serum; this amount was all our syringe would hold, so we repeated the dose every two hours until 10 c.c. had been given. At the same time 1/10 gr. doses of calomel were given every half hour, until late in the afternoon, when the bowels were started by an enema. A good movement followed. After this we gave the child, every hour, as much as she would take of milk and limewater, 1: 2.

The following day (sixth day) the conditions were about the same. We gave 10 c.c. of the serum, repeated the course of calomel, and kept cold cloths constantly to the head. The temperature was 103.5 at noon, pulse 140 and respiration 60.

On the seventh day the child seemed better; temperature 100.4, pulse 130, respiration 60, strabismus still present. On this day we gave 8 c.c. of the serum at one injection. She was taking more food; she moved her right arm at times, and recognized her parents.

On the ninth day respiration was more regular, pulse 118 and the temperature normal. The eyes showed only occasional strabismus. The little patient teased for cookies and meat, and wanted to be taken up. Morphine was given in 1/60 gr. doses often enough to control fretfulness.

On the twelfth day the family physician reported all symptoms improved, eyes better, right hand somewhat swollen and painful. On the fourteenth day the child was brought down, by train, to the hospital in Boulder, a distance of thirty miles. On her arrival at the hospital her temperature was 99.2, pulse 120 and respiration 30. She seemed none the worse for the trip. At 9 o'clock next morning her temperature was 103.8, pulse 130 and respiration 24. Ice was kept to the head almost constantly and the child kept quiet by the hypodermic use of $\frac{1}{60}$ gr. of morphine as needed.

The following day (sixteenth of sickness) the temperature varied from 97.4 to 103.5, and the pulse ran from 80 to 120. We had been feeding her raw milk and limewater. On the night of the seventeenth day of sickness she was very restless, vomited and passed green, offensive stools, so we gave calomel and placed her on malted milk; the stools improved, and the temperature was lowered.

On the twenty-third day of illness I began giving her 1 gr. doses of phenacetine in place of morphine, as needed, to prevent restlessness and pain.

On the twenty-sixth day she vomited a number of times; the highest temperature was 101.5. For several days there had been marked reaction of the head, knees drawn up, abdomen retracted, bowels badly constipated, eyes crossed and pupils dilated.

She had been getting calomel and enemata sufficiently often to move the bowels every day. Ice was kept applied to the head. She no longer recognized her mother, and had to be forced to take food; nutrient enemata were not retained.

On the twenty-seventh day I decided to begin the hypodermic use of yeast nuclein. Five minims were used the first day; ten minims were injected the second day. Counsel being called at this time, the use of tinct. gelsemium was recommended to be given in 1 minim doses every three hours, if necessary, to keep the patient quiet and relaxed.

Fifteen minims of nuclein were given on the twenty-ninth day, and this amount was injected each day until the forty-fourth day of sickness. She had gradually grown better under this treatment, the temperature being from one degree subnormal to 100° F. On the 31st day I found her pulse irregular and weak, but it was better next day. On the 44th day, and for some days thereafter, the temperature remained subnormal, the pulse was slow and irregular, the pupils widely dilated, and insensitive to light. On the 50th day the pulse was only sixty and intermittent. During the next two days the pulse improved somewhat and the child was so much better in other ways that on the 52d day she was removed from the hospital. She then began taking more food and talking some, but it was certain that she had but little sight.

On the 55th day I examined the eyes with the opthalmoscope. The pupils were widely dilated and did not react to light. The media were clear, but I could not get a satisfactory view of the fundus. I saw the vessels in places and a deep red reflex in other parts, and decided that it was most likely a case of retino-neuritis.

On the 62d day an opthalmic surgeon examined the eyes and made the same diagnosis. There was light perception in the left eye, but apparently none in the right.

At the time the child left the hospital she was in an extreme state of emaciation, but now, thirty days from that time, she is taking large quantities of food and is in good flesh.

At the present time, nearly twelve weeks after the onset of the illness, she is still unable to sit alone and does not talk as much as she did before being taken sick.

The pupils now react to light, and the child can see and locate objects. The retina is very pale and there are numerous spots showing on the choroid. For three weeks we have been giving gradually increased doses of potassium iodide and there has been marked improvement in vision. The use of electricity over the cranium is now contemplated.

ANOTHER PROTRACTED CASE OF MENINGITIS.

June 5th I was called to see a baby girl of three years who had then been sick for five weeks. Physicians called during the early stages of the disease had pronounced it meningitis. She then had retraction of the head, some fever and occasional vomiting. At one time quite early in the attack, I am told, sugar was observed in the urine. At that time she was able to use the chamber; took considerable food by the stomach, and talked and recited little pieces.

I was called to see her because for several days she had been vomiting every few minutes, regardless of whether food had been recently taken or not.

I found her with a temperature of 101.2, pulse 130, respiration 30; there was retraction of the head and abdomen, but the eyes seemed natural, and the little girl put out her tongue when requested to do so. She had been badly constipated all through the attack, so I began giving 1/10 gr. doses of calomel every half hour while she was awake, followed by an enema the next morning. After 24 hours there was great improvement. Malted milk was ordered to be given, a few teaspoonfuls every two hours. On the third day the temperature was normal; she rested well at night; took some food, and, although she was nauseated many times, she vomited only twice in the 24 hours.

The calomel did not cause free action of the bowels, so on the fourth day I gave castor oil. This was followed by both vomiting and catharsis.

On the fifth day I gave 1/50 gr. of morphine hypodermically, which produced sleep and quieted nausea and vomiting. The dose of morphine was increased to 1/30 gr. and given by enema as often as needed to keep the child quiet and control the vomiting. When anything was given by the mouth it would be promptly vomited; so, on the seventh day, I began systematic feeding by the bowel. One ounce of completely peptonized milk was given per rectum every six hours. Small pieces of ice were allowed to melt in the mouth every half hour, and the following (eighth) day brandy and ice was given in this way and retained.

At this time I began yeast nuclein, one-half drachm in the enema night and morning. After two days I found she would take and retain the same amount by the stomach, if given with cracked ice.

From the seventh to the fourteenth day there was but little change; she retained the enemata and usually all the milk was absorbed from the bowel; she continued taking iced brandy and nuclein by the stomach, and small amounts of malted milk, but there was still occasional nausea and vomiting. On the fourteenth day we began giving eggnog by the mouth, of which she took and retained considerable quantities for several days. She then refused to take it.

On the fifteenth day some external strabismus was noticed, but the pupils appeared normal. During this time there was very little fœcal matter passing the bowel. A cleansing enema was given each morning, and seldom did any remains of the nutrient enemata pass from the bowel.

From the fifteenth to the nineteenth days the patient seemed better; taking more food by the stomach, talking and moving freely. On the nineteenth we stopped the nuclein, but after three days she did not seem so well, so we began its use again.

From the twentieth to the thirtieth day there was but little change in the symptoms; the child refused to take food by the mouth. If the nurse succeeded in getting a spoonful of food into the stomach it was usually vomited; at other times food would be held in the mouth for half an hour or longer.

The quantity of peptonized milk used by enema was gradually increased to two ounces every four hours, but emaciation gradually progressed until her death, which occurred on the thirty-first day of my attendance on the case, or about nine weeks from the onset of the disease. Death apparently was due to asthenia.

NEUROTIC SPINE.

By **Henry Ling Taylor, M.D.,**
New York.

THERE is no deformity characteristic of neurotic spine, which is not due to a lesion of the spinal column, nor even to a gross lesion of nervous structures, but rather to the patient's nutrition and morale. It is a functional disorder sometimes responding readily to appropriate treatment, at others baffling the most skillful theraputist and driving the relatives to despair.

Neurotic spine is a weak back associated with certain general and local symptoms. The patient tires easily, and often is able to walk but short distances, sometimes not at all. There is a great deal of backache, particularly in the lower part of the back, and there are usually distinct points of tenderness over certain spinous processes; such spots may be found just below the occiput, between the shoulders, and in the lumbar region. Pressure on these points may give rise to a feeling of nausea. It should be borne in mind that in disease of the vertebra there is practically never localized spinal tenderness, and that the characteristic pains of Pott's disease are in front or at the sides.

In neurotic spine there is often tenderness over the sacro-iliac synchondroses, over the iliac crests, in the iliac fossæ and elsewhere. This tenderness is often a sensitiveness to slight contact. Jolting, sneezing and coughing do not usually hurt these patients as they do kyphotics, and the characteristic attitude is absent.

I have several times observed a typical neurotic spine in girls of fourteen or under. The one whose back is shown in the cut was fourteen years old, and was seen at the Hospital for Ruptured and Crippled. She had several distinct points of spinal tenderness, as well as tenderness over the bony prominences of the pelvis, backache, neurotic expression, and a languid carriage. The case was of special interest, because she was also round-shouldered and had a moderate lateral curvature, as shown in the cut. She was sent for spinal support, which is contraindicated in neurotic spine, and she improved remarkably and quickly under a small blister to the back. Sometimes a light application of the cautery to the back produces an excellent effect. In order to effect a radical and permanent cure, it is usually necessary to improve the patient's nutrition and morale, get them interested in something outside of themselves, and systematically train the muscles.

60 West Fifty-Fifth Street.

PEMPHIGUS IN A CHILD SIX MONTHS OLD.*

By Ewing Marshall, M.D.,
Louisville, Ky.

THE following case of pemphigus is of some interest on account of the age of the patient—six months. I am sorry Dr. Boggess is not present, as he saw the case before I took charge of it. I do not know what treatment, if any, he instituted.

The treatment of pemphigus is generally unsatisfactory. In looking up the literature the consensus of opinion seems to be that arsenic has more influence than anything else in the way of internal medication. In this case, occurring in a child six months old, arsenic internally was out of the question. Dr. Griffiths mentioned that he saw a case recently where he used vaseline, but it ran a protracted course. This child was very much run down. As is almost a routine practice with me whenever I get hold of a child that is below par in health, I ordered inunctions of cod liver oil. I had tried simple applications in this case with no benefit, but the inunctions of cod-liver oil acted splendidly. The child has improved in appearance, though not much in weight. It has a healthier look and the blebs have passed away. The blebs were especially numerous about the upper part of the body, chest and face. It has now been eleven days since the beginning of the inunction treatment.

I report the case because of the tender age of the child, and the prompt recovery from the use of cod liver oil by inunction.

DISCUSSION.

Dr. P. F. Barbour.—It is rather unusual to see pemphigus in a child so young as six months. It is also rather unusual for the patient to recover so promptly under any method of treatment, so I think the doctor is to be congratulated upon his brilliant results from the use of cod liver oil. I do not object to the use of arsenic as much as the reporter seems to. In many conditions in childhood arsenic acts beautifully. It should be given in small doses and on a full stomach. After the results he has attained in this case, however, there is no suggestion to be offered in the way of improvement on the treatment as the child is perfectly well.

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* Reported to the Louisville Clinical Society.

Dr. J. W. Irwin.—The case is an extremely interesting ing one. Pemphigus is essentially a disease of disturbed nutrition. We meet with it in children who are poorly clothed, poorly fed, and live in badly ventilated places, etc. In my experience we do not meet with it anywhere else. I have never seen it in a well-nourished child, man, or woman. The disease occurs frequently in children, but six months is a very tender age for pemphigus to appear. To this extent the case is a remarkable one.

Touching the question of treatment: Time is an important factor in these cases. If you will let them alone they will get well usually within ten days. The eruption will disappear even in those cases which are badly fed and poorly clothed. I have had some cases in children three years old that were treated by means of arsenic, quinine, iron, supportive measures, cod liver oil, etc., and I have seen others recover just as quickly without treatment. A change of nutrition is all that is necessary, and nature will bring about a good result. When you give a child six months old arsenic there is great doubt as to its efficacy. You cannot give a child of this age large doses of arsenic, and it takes some time to get the full effect of the drug. I depend chiefly in these early cases on a change of nutrition, and if I give them anything it is some simple form of iron.

Dr. E. Marshall.—I am a little surprised to hear Dr. Irwin's remarks about the nature of pemphigus. There are several varieties of pemphigus, acute and chronic. Some of the chronic cases, according to the best authorities, practically never recover. About the time I took charge of this case Dr. Griffiths told me of a family in which he had had a series of cases lasting over several months, each individual having it for a series of weeks. My experience in the treatment of pemphigus is slight. Most of the cases I have seen have been in the dispensary. This case occurred in the Home for Friendless Women. This baby is an illegitimate child; it is very much run down, and for that reason I put it upon inunctions of cod liver oil, hoping to improve its nutrition, and was surprised to see that without any other treatment the pemphigus quickly disappeared.

EDITORIAL COMMENTS

The Anemias of Infancy Until the intelligent interest of the general profession is aroused upon this topic, scientific advance in our knowledge will be much crippled. The present literature shows little more than a good beginning in the right direction. We have first of all to unify the terminology; this shows at present needless variation even in words applied to comparatively well-defined morphologic constituents of the blood. The next thing, and the most important thing, is a more rigid and thorough clinical study of the cases. Under the title of "V. Jaksch's Disease," for example, or "Anemia Infantum Pseudoleukæmica," no less than four or five distinct disorders of the blood in childhood have been recently described by various authors. And the data of the reports are often so loosely set down that a competent hæmatologist is unable to do more than guess at what the disease actually was. To a more exact clinical study of the blood there are requisite only a few conditions, but these must be perfectly fulfilled. We think it safe to say that several months should be given to practice in counting red and white cells before a physician should trust his numerations. Even the making of films requires repeated efforts; and without accurate attention to each detail of preparation of the covers the stain will not be satisfactory or intelligible. The methods of estimating hemoglobin by V. Fleischl's and Gowers' instruments are so dependent on the "personal equation" of the observer that it would be a safe rule for all except the most experienced to use the "specific gravity method" instead. If the writer's time is short, it should be given exclusively to making an "Ehrlich stain." This gives far the most extensive and important information on *diagnostic* points. It shows readily the character of the red cells, nucleated reds when present, the relative number of whites and reds, the character and relative proportion of the various types of whites. A differential count of the whites—an indispensable factor in diagnosis—can also be most easily made with the same stain. One other point (upon which R. C. Cabot has wisely laid stress) is a careful statement, not merely of the age of the child in years and months, but of his actual development. This includes number and character of the teeth, condition of the fontanelles and epiphyses, the mental and muscular advancement, and, perhaps, also the diet and hygenic conditions. Where the observer has not time nor instruments at his command, he need only mail some properly prepared films to one of the laboratories where such work is now constantly being done. We are already finding that a blood examination in difficult cases is just as essential to a correct diagnosis as the percussion of the lungs or testing of the urine, and in specific diseases of the blood, whether primary or secondary, no observer should be satisfied with anything less than a complete description of the hæmic condition. B.

Mortality Statistics in the Twelfth Census

So great is the difference in regard to the registration of deaths that, as matters stand, it is impossible to obtain that statistical information from this source that might be thought possible. In some States the law provides for a return to a central office, in others the registration of deaths is entirely local and sometimes incomplete. The many existing forms of certificate differ so materially for different localities that it becomes a great burden upon the census office to correct the discrepancies so arising. The law allows the census office to make use of the register of deaths of any locality or to leave the work of preparing a register to the census enumerator. Past experience has shown that mortality statistics collected in the latter manner are incomplete and inaccurate.

With the purpose of gaining greater uniformity in death certificates and thus rendering them valuable, a circular has been addressed to the offices having charge of the registration of deaths in such States and cities as employ such a system. This circular, after calling attention to the above-mentioned difficulties, proposes the adoption of an enclosed form which includes such facts as are required by Congress for the census. The information desired embraces: (1) Decedent's name; (2) sex; (3) color; (4) age; (5) conjugal condition; (6) place of birth; (7) birthplace of each parent; (8) occupation; (9) cause of death; (10) date of death, if born within the census year; (11) date of birth. It is proposed that this form be adopted at the beginning of the census year 1900. As such statistics would be of great value, and there is no way of enforcing the adoption of the proposed form, we urge the hearty co-operation of the medical profession with the census office in this matter. T.

Temporary Contraindications to Vaccination

The physician is so apt to undertake vaccination "upon demand" that it may be well to condense from a recent number of the *Presse Médicale* the following observations: At the *Maternités de l'Assistance Publiques* of Paris, the rule is, not to vaccinate new-born infants weighing less than 2,500 grammes (5½ lbs.) In infants with active erythema of the nates vaccination is postponed. A little later there may appear a formal contraindication, *eczema.* Whether on head or body, local or generalized, moist or dry, it should excite at once the attention of the physician. The danger is the appearance of supplementary vaccine-pustules upon the diseased areas. Experience has shown that the risk is far from imaginary. Vaccine eruptions have appeared with great violence on eczematous skin, the virus being conveyed by the child's or nurse's fingers, by clothes, etc., and being easily inoculable upon a raw surface. Only in times of smallpox epidemic should we disregard such contraindications. B.

Causes of Constipation in Infants

Most of the causes of constipation in infants may be grouped under improper diet and loss of muscular tone of the gut. Occasionally also we find as causes deficient secretion of the intestinal glands and anatomical conditions of the colon. The most frequent fault in diet is that it contains too little fat and too much proteid. Undiluted cow's milk, and milk diluted but not properly modified, and many of the artificial foods, present this difficulty. Loss of muscular tone of the intestine may be due to any disease which impairs the general health; it is also often due to lack of care on the part of the nurse in cultivating regular habits in the infant.

In regard to the anatomical condition, Dr. H. H. McClannahan (*Journal American Medical Association*) calls attention to the fact pointed out by Jacobi many years ago, that the colon in infants is normally longer and more loosely attached than in adults. Hence it is probable that in some cases constipation is due to reduplication of the folds of the bowel with partial closure of its lumen. T.

Treatment of Constipation in Infants

In breast-fed children we must seek to discover what is the fault with the mother's milk. It will generally be found that the proteid percentage is higher, while the fat percentage is lower than normal. Much may be done to remedy this by reducing the consumption of proteids on the part of the mother or wet nurse and increasing her daily exercise. If this does not correct the difficulty, a small amount of cream may be administered once or twice daily, or artificial feeding with a properly modified milk instituted.

In constipated bottle-fed infants the fat should be increased to at least 4 per cent., regular habits taught, and a small quantity of orange juice or stewed prunes administered daily. The suppository of soap or gluten, or waxed paper inserted into the rectum at the same hour every day is very effective in promoting regularity of the bowels. Massage, both general and local is often of the greatest service. Drugs should be avoided as much as possible. Cod liver oil and the sweet preparations of malt are often of value.

When constipation is due to reduplication of the colon, McClannahan lays great stress on the importance of straightening it with the finger or by means of daily irrigations. A lisle-thread catheter is passed through a cork. The catheter is passed into the bowel a short distance while the cork is pressed against the anus; a syringe is attached to the catheter, and after the water begins to flow, the catheter is gently passed on into the bowel. The water unfolds the bowel, while at the same time it improves the tone of the muscular wall and stimulates peristalsis. T.

SOCIETY REPORTS

NEW YORK ACADEMY OF MEDICINE—SECTION ON PEDIATRICS.

Stated Meeting, October 12, 1899.

HENRY KOPLIK, M.D., Chairman.

Brain Tumor.—Dr. HENRY HEIMAN presented a girl of six and a half years, weighing sixty-two pounds. According to the history there had been gradual optic atrophy, beginning quite early.

Chronic Internal Hydrocephalus.—He also presented a boy of nine years, who had been born after a normal labor. The child had fallen against an iron bar about two months ago, and since that time he was thought to have been worse, but the mother admitted that he had never seemed "very bright." It was probable that the child was suffering from a neoplasm in the pons, near the cerebellum.

Dr. J. J. WOLF reported on the examination of the eyes. He stated that there was an internal deviation of the right eye; both pupils were rather narrow, but responsive; movements of both eyes very much restricted. Outward rotation was completely absent in the left eye. Both eyes showed choked disk; the vessels were very tortuous, but there were no hemorrhages or white spots around the macula. Vision was greatly reduced in both eyes, though worse in the left.

Dr. ALFRED WIENER said that he thought the second child was suffering from chronic internal hydrocephalus. Such cases were not very rare. The disease was said not to be associated, as a rule, with any local symptoms. Optic atrophy was usually the first symptom to appear. These children very often improved, at least, temporarily. The most successful treatment had been by mercurial inunctions. In the first case there seemed to be no doubt regarding the presence of brain tumor, but as to its location there might well be a difference of opinion. The involvement of the abducens on both sides and of the seventh nerve would place the growth in the superior peduncle of the cerebellum. The prognosis in this case was, of course, bad. He would advise an operation, because it would save the sight. A large piece of bone should be removed on each side, and it should be done at an early stage in order to save the child from blindness. The gait showed decided ataxia, but the ataxia was still more marked in the upper extremities. The knee-jerks were present. In the other case, the headaches, the slight ptosis, the bilateral involvement of the optic nerves all pointed to brain disease, but there was no focal involvement.

Dr. **Heiman** said that, after consultation with Dr. Wiener, it had been decided to perform lumbar puncture in the second case. In the other case, however, this did not seem to be advisable, as this operation might result in pressure on the fourth ventricle, and so cause death.

Dr. **Wolf** asked how Dr. Wiener would explain the affection of so many nerves supplying the external ocular muscles. If it were assumed to be due to pressure, then there should be more symptoms referable to the motor tract. He thought it might be assumed that there was an internal hydrocephalus caused by the peculiar situation of a small tumor in the cerebellum. A theory had been advanced that tumors pressing upon the aqueduct of Sylvius were most liable to cause chcked disk and optic atrophy in the early stages.

Dr. **Wiener** replied that the tumor being in the superior penduncle, as he had stated, would produce an internal hydrocephalus.

A Case of Scurvy.—Dr. **Walter Lester Carr** reported a case of scurvy. The patient, a girl of twelve months, had been brought to him because the child had some painful affection which the mother thought was rheumatism. She was emaciated and poorly nourished. There was swelling over the lower third of the left thigh, which did not extend into the joint. There was swelling around the ankles and tenderness over the malleoli. The skin was hemorrhagic; the mouth was reddened and the gums were dark blue and swollen. The mucous membrane did not exhibit any hemorrhagic areas. The urine did not contain any blood. The child had been nursed only a short time after its birth, and had then been fed on milk and on a series of proprietary foods. The child had been placed by him on beef juice, orange juice, and a small quantity of milk. Within three days most of the symptoms had disappeared, and the child had gone to complete and rapid recovery. After a few days of this treatment it had been able to move around.

Dr. **Koplik** remarked that one of the first symptoms was an apparent paresis of the limbs. Whenever a child was brought to physician with painful swelling of the limbs, scurvy should always be thought of.

Dr. **S. S. Jones** referred to a case of scurvy seen by him last summer, in a child of nine months that had been fed on artificial foods. This child had not improved very materially under the use of beef juice alone, but had done much better after the addition of orange juice. The apparent paresis had been quite marked in this instance.

Dr. **A. Jacobi** directed attention to that class of cases in which among the first symptoms was hematuria. He had seen two cases in which this had been the only symptom. Scurvy was most commonly confounded, he said, with either acute poliomyelitis or with acute rheumatism. Such mistakes should not be made. It was easy to distinguish between paralysis and immobility arising from pain. Scurvy was differentiated from rheumatism by the swelling being below the joint instead of an effusion into the joint. By properly supporting the limb and carefully moving the joints, the differential diagnosis could be made without difficulty.

Dr. **Heiman** stated that the blood in these cases showed distinctly a progressive pernicious anemia. He had also found a number of nucleated red blood cells. It should be borne in mind that a few such cells were normally found in infants.

Dr. **Herman Besser** spoke of a case, seen last summer, in which the diagnosis made at two hospitals had been stone in the bladder. The child was about one year old, and had no teeth. The gums were slightly livid, and there was hematuria. After having been put upon milk and beef juice for a few days the child was practically well.

Dr. KOPLIK said that he had recently seen a case in which the ends of the bones had been so much enlarged that the question had arisen as to whether there was an osteomyelitis, a tuberculous arthritis or scurvy. The case had proved to be one of scurvy.

Antipyresis in the Febrile Disorders of Infancy. Antipyretic Drugs; their Use and Abuse In the Treatment of Fever.—Dr. A. JACOBI read a paper with this title. He said that the most effective antipyretic drugs were those which were directed againt the portion of the body engaged in heat production. They acted either on the cells of the tissue or on the heat-regulating centers. Those most commonly employed reduce the temperature by increasing the heat elimination through hyperemia and perspiration. The temperature centers could be paralyzed by large doses of digitalis and of veratrum viride, or by excessive doses of phenol preparations. The effect of quinine was local in the cells, and remained evident even after section of the spinal cord, while the phenols appeared to act both on the centers and on the surface. The latter exerted their influence even when the lower part of the cortex was irritated by puncture. They also promoted analgesia. Some physicians object to antipyretic altogether on the ground that higher temperatures, in the infectious diseases chiefly, were necessary for the formation of antitoxins. But it should be remembered that the typhoid fever bacilli outlived their toxin, and possibly also their antitoxin. The mortality rises with the height and persistence of the high temperature. Pneumonias and typhoids, with fair remissions, permitted of fair prognoses. Relapsing fevers of long duration and very high temperature had a mortality of only 2 or 3 per cent. because of the long remissions. The multiplicity of the causes of fever proved its nature—it was not an entity, but a symptom. Its treatment should not be governed by iron-clad rules. A temperature which might be dangerous to one individual was of little importance to another; moreover, a temperature which might be easily and safely borne at the beginning of an illness might prove very harmful in the later stages of the same disease. The treatment of the symptom, fever, gave us no hope of shortening the disease, of which it formed a part. On the other hand, we could add materially to the patient's comfort, and at the same time not at all interfere with the healing process. To allow a high temperature to deteriorate tissues and exhaust the brain was as injudicious as was the custom of emphasizing the number of degrees of Fahrenheit as the only important part of a morbid process. Protracted fevers interfered seriously with nutrition, and on this account became more serious in proportion to the youth of the individual. He believed more infants and children died of the slow results of protracted high temperature—what was called convalescense—than were destroyed during the active stage of the disease. An acute anemia was more easily overcome than a chronic one. To the latter class belonged those associated with, or following diseases attended with high fever and starvation. The younger the animal or person, the sooner would it succumb to starvation. The blood of the child was less in quantity, relatively, and had less fibrin and less salts, and contained more leucocytes than in later life. Most or our antipyretics were at the same time diaphoretics and analgesics, and hence were often powerful adjuvants to baths and other treatment, or were useful substitutes for baths when the latter were distinctly contraindicated.

Quinine.—Quinine affected bacteria but little. In watery solutions of quinine fungi readily grew. This drug diminished the metabolism of albuminates and the amount of uric acid; also the number of circulating leucocytes and their amœboid movement. In small quantities it accelerated the pulse and increased the blood pressure; in larger doses it might cause urticaria or other exanthems, and even albuminuria and hematuria. In fair doses, quinine was certainly antipyretic. Besides malaria, febrile diseases of a remittent type, such as typhoid fever and pneumonia, were very amenable to the action of quinine. In malaria it should be given from three to five hours before the expected attack. Absorption was certainly aided by the addition of diluted alcohol or of spices, but the medication in children's diseases often demanded that certain advantages be sacrificed to palatability. Oleate of quinine should not be used because of the irritation produced by the oleic acid; inunctions with lanolin were far better, if this mode of administration were used at all. Medication by the mouth was always more or less unreliable when the temperature was high. The neutral tannate, given in doses 150 per cent. greater than the sulphate of quinine, would answer very well, but most physicians would prefer to administer the sulphate of quinine in some vehicle, such as syrup of coffee, chocolate or elixir adjuvans. It should not be forgotten, however, that if quinine were kept in contact with an elixir for some time, portions would be dissolved; hence the quinine should be mixed with the vehicle only as wanted. Many children would take eagerly considerable quantities of the sulphate if it were mixed with a large proportion of chocolate.

In some cases of chronic malaria, associated with marked tumefaction of the spleen, it would be found that benefit would follow the use of ergot, even when most of the other drugs usually employed in this disease had failed. He had been able to confirm this statement by an experience extending over a period of forty years. It was often advisable to administer the ergot with quinine, or with arsenic.

Salicylic Acid.—Salicylic acid was both an irritant and an antiseptic. It was eliminated through the kidneys unchanged, or as salicyluric acid. It was a nerve sedative, and excited peripheral hyperemia and perspiration. For internal administration the salicylate of soda was better because less irritating. In many cases of pyemic fever the combination of quinine and salicylic acid acted admirably when neither drug alone was effective.

Antipyrin.—Under normal conditions antipyrin increased the pulse and blood pressure, and was, therefore, contrindicated in hemoptysis. It was moderately anesthetic and markedly styptic. It was quite irritating in the subcutaneous tissue. It was sedative and analgesic, but its action was not that of a pure nervine, as it appeared to produce its effect through the general circulation. The body temperature would be diminished within fifteen or twenty minutes after first dose. As a rule, it should be repeated in two hours except where the drug was given for its analgesic effect. This drug had seemed to him ineffective in the fevers of cranial disease.

Acetanalid.—This drug does not disturb the stomach and skin to the same extent as some other antipyretics. Being a derivative of anilin, it was poisonous; not only did it paralyze the central nervous system, but it decomposed the blood.

Phenacetin.—Phenacetin resembled acetanilid in its action, but was much milder. He never ordered adults more than three grains as a tentative or first dose.

Alcohol.—Alcohol possessed the great advantage over most antipyretics of rapid absorption in the stomach. As a dose of half an ounce was liable to prove fatal to every child less than ten years of age, one should well consider its advantages and disadvantages before using it. He was not one of those who withheld alchohol altogether. Alchohol was exceedingly well tolerated by feverish patients. In the aseptic fevers, at least in their earliest stages, it was rarely required, but in the infectious diseases, and in septic cases generally, the doses tolerated and required might seem excessive to the inexperienced. He had long been a firm believer in the value of large doses of alcoholics in grave cases of diphtheria. The large doses often taken easily during the height of such a disease would no longer be tolerated as soon as convalescence had been established. For the antipyretic effect large doses of alcohol were required, and, therefore, it should not be given for this purpose except in septic cases. It should not for the same reason be given in the early stages of pneumonia for its antipyretic action. It was well to remember that 4 per cent. of the alcohol was eliminated through the lung, and that it was not wise to throw this extra work upon the lungs while these organs were in a state of acute inflammation.

PRACTICAL NOTES

Treatment of Bronchiectasis with Fetid Expectoration.

℞ Neutral acetate of lead...0 gr. 015 to 0 gr. 03 centgr.
Terpine.................0 — 15 to 0 — 30 ——
Dover's powder.........0 — 10 to 0 — 15 ——

M. Make twenty such pills. Take two or three pills a day (for an infant 2 years old).

From time to time stop the above and substitute the following:

℞ Guaiacæ..........................
Fowler's solution, āā............8 grammes (ʒi)
Oil of Eucalyptus ....4 " (ʒij)

M. Ten drops morning and evening.—*Sem. Medical.*

Simple Catarrhal Conjunctivitis.—

℞ Acidi borici........................gr. xl
Sodii chloridi.......................gr. vi
Aquæ camphoræ
Aquæ destil, āā.......................℥ii

M Sig. Apply as lotion to eye every two hours.
—*Joürnal Amer. Med, Association.*

The Roetgen rays will reveal large cavities in the lungs, and large effusions into the pleura; but say the best we may, small areas of consolidation are hardly ever distinguishable.—*Manuel de Diagnostic Médical, Debove-Achard*, Paris, 1899.

Heroin.—Heroin is not so harmless as was formerly supposed. It has a far greater depressant action on respiration than is seen in the case of morphine. Heroin is also a cardiac depressant, and in addition gives rise to muscular twitchings and convulsions. The maximum adult dose at present should not exceed 1/14 grain. Harnack (Münch. med. Woch., July 4, 1899.)—*Monthly Cyclop. of Prac., Med.*, September, 1899.

Typhoid Fever in Lyons.—From the latest official report it appears that in the past thirty years typhoid fever has almost doubled in frequency at the hospitals of Lyons. For five years past there has been a regular increase. The water appears to be the source of the disease, not only the wells, but the pipe water as well. In the latter have been found even the eggs of taenia, and one might assert with a measure of truth that imperfectly filtered latrine water is the common drink. Happily in all the hospitals, save the ill-equipped Hôtel Dieu, the mortality has continued to fall. The report suggests the advisability of separate hospitals for typhoid fever.—*La Revue Médicale*, September 13, 1899.

An External Application to Lessen the Dangers from Desquamation in Scarlet Fever.—To prevent the dissemination of the scales thrown off from the skin in the sequence of scarlet fever, Williams recommends the application of a mixture of one part off glycerin to seven parts of ten-volume solution of hydrogen dioxide containing a small amount of free hydrochloric acid. It has been further found that if the patient is rubbed all over with a similar solution, but without the hydrochloric acid, the period of desquamation may be materially shortened and removal of the layer of epithelium hastened.—*Boston Medical and Surgical Journal*, September 14, 1899.

Catarrhal Stomatitis in Children.—Prof. GRAHAM recommends the following prescription for local treatment:

℞	Sodii boratis	gr. xx
	Glycerini	℥ ss
	Aquæ	q. s. ad f ℥ iij

M Sig. Use as a mouth-wash.

This wash is often best used by grasping a pledget of cotton between the blades of forceps and swabbing the mouth with the fluid.—*Gaillard's Med. Journal.*

Castor Oil.—Malt extract is used as a *taste-corrigent* for castor oil. It is mixed with an equal quantity of the oil in a warm mortar.—*Gaillard's Med. Journal.*

Scarlet Fever.—J. LEWIS SMITH recommends the following "diaphoretic, diuretic and laxative" mixture for scarlatinal nephritis:

℞	Potassi acetatis	
	Potassi bicarconatis	
	Potassi citratis, āā	ʒ ii
	Infus. tritici repentis. ad	℥ viii

A teaspoonful every three or four hours for a child of five years.

Whitla gives the following diaphoretic mixture for the early stages of scarlet fever:

℞	Spiritus ætheris nitrosi	ʒ ii
	Potassii citratis	ʒ i
	Liq. ammon. acet	℥ iss
	Syrupi simplicis	℥ i
	Aquæ camphoræ, ad.	℥ iv

M Sig. A teaspoonful every three hours.

Widerhofer recommends the following for scarlet fever, with throat affection:

℞	Potassi chloratis	gr. xx
	Syrupi aurantii	ʒ iii
	Decoct. cinchonæ, ad	℥ iii

M Sig. A teaspoonful every two hours.

THROAT SPRAY.

Whitla uses the following spray for the throat in scarlet fever:

℞	Glycerini boracis	ʒ iv
	Glycerini acid. carbolici	℥ iii
	Aquæ rosæ, ad	℥ x

SKIN LOTION.

J. Lewis Smith recommends the following lotion for the itching of the skin in scarlet fever:

℞	Acidi carbolici	ʒ i
	Tinct. camphoræ	℥ ii
	Aquæ puræ	O i

M. Sig. Shake well, and apply over surface when needed for pruritis.—*Jour. Am. Med. Association.*

ABSTRACTS

THE USE AND THE ABUSE OF NITRATE OF SILVER IN THE TREATMENT OF OPHTHALMIA OF THE NEW-BORN.

HARRY FRIEDENWALD (*Maryland Medical Journal*, 1899, xlii., 14) considers the prophylactic treatment is as nearly perfect as can be hoped for in things medical. Howe (Transaction Am. Oph. Soc., 1897) has shown "that previous to the introduction of Credé's method the records of over 17,000 births tabulated by thirteen observers showed that over 9 per cent. of the children developed ophthalmia neonatorum. On the contrary, after the introduction of Credé's method the record of over 24,000 births tabulated by thirty-one observers showed only 0.65 per cent. In other words, the proportion was nearly fifteen times more frequent without the Credé method than with it." The experience of those connected with out Maternité Hospital in Baltimore thoroughly accords with the above.

But the treatment must be carried out properly—in strict accordance with Credé's method. The solution to be used is a 2 per cent. solution, and a single drop is to be instilled directly upon the cornea as soon as possible after birth. It will not do to either increase or decrease the strength of the solution. Thus Howe's study has shown that a 1 per cent. solution reduces the percentage of ophthalmia only 2.4 per cent., or about four times that of the standard solution.

The effect of stronger solutions and their more abundant use may be very disastrous.

In hospital practice no one questions the propriety of applying Credé's method. In private practice it is rarely ever used. Is it not almost criminal neglect not to use it when the mother is known to have gonorrhea, or even when this disease is even suspected? The conscientious physician who does not apply it in cases of severe leucorrhea, or when the mother has previously born children that suffered opthalmia, will find it difficult to relieve himself in his own mind from blame if the infant he delivers develops ophthalmia.

As to the curative treatment of ophthalmia of the new-born with nitrate of silver, here it is equally important to apply the remedy properly, but it is much more difficult, for accurate judgment is required, and hard and fast rules cannot be given. The solution is likewise 2 per cent. In mild cases it may sometimes be reduced to 1 per cent., and stronger solutions are rarely required. The same effect can be obtained with 2 per cent. solution as with the stronger solutions if it is applied for a longer time.

It is equally important to know when not to use the silver solution. During the first stage of ophthalmia, when the lids are greatly swollen, the conjunctiva is congested and glistening and exuding a thin straw-colored serum, with sometimes a fibrinous deposit. But what is most serious is that this condition of the conjunctiva is frequently followed by corneal ulceration. It is necessary to curtail this state as much as possible, and this can be done by means of cold applications; cloths which have been left lying on a block of ice are placed upon the eye in rapid succession and continuously, day and night.

As soon as the serous exudate becomes purulent we begin the use of the silver solution. But it is well to apply the solution very gently at first, brushing it over the conjunctiva but once or twice, for if applied vigorously even now the false membrane may make its appearance. The solution is not to be dropped into the conjunctival sac as is frequently done. The lids are to be thoroughly everted and the solution penciled over the entire surface. Many surgeons neutralize the excess of the nitrate of silver solution with a little salt water.

During the first few days, while there is still much swelling of the lids, it is necessary to continue the cold applications. It is most important to keep the eyes from collection of pus by frequently separating the lids and washing out the eye with some mild solution such as boracic acid solution.

The nitrate of silver is to be used once daily, and after the first application or two it is to be penciled over the conjunctiva until a thin milky layer is everywhere apparent, and it is well to follow this application with cold cloths for half an hour or an hour to prevent too great reaction. This treatment is to be continued until the case is cured.

In those cases usually neglected in which a chronic ophthalmia is found and in which the conjunctiva presents enormously enlarged papillæ resembling the cock's comb—in these we are sometimes obliged to use stronger solutions, 3 or even 4 per cent., but with great care and careful protection of the cornea.

PERFORATION OF THE STOMACH IN AN INFANT SEVEN WEEKS OLD.

T. M. Rotch (*American Journal of the Medical Sciences*, cxviii., 442) reports the following case: A male infant, aged seven weeks, was admitted to the Infants' Hospital, February 2, 1899. The history given at the time of entrance was that the infant had been well until four days previously, when his abdomen became suddenly much distended, and he appeared to suffer considerable pain. After the first twenty-four hours the bowels had moved regularly and the pain had lessened. Vomiting had begun about eight hours before entering the hospital.

An examination by Dr. Dane, the surgeon-in-charge, and by Dr. Morse showed a well-developed and fairly-nourished infant. The facial expression was rather drawn, the eye dull, and the abdomen much distended and tympanitic, excepting that there were very slight areas of dullness in both inguinal regions. A few coils of distended intestines could be detected. The pulse was 165, the temperature was 101° F., and the respirations 35. The diagnosis of peritonitis was made, and it was decided to operate at once. Ether was given, and an incision of four inches long was made in the median line, and about 2 drachms of slightly flaky serum exuded. The vessels of the much-distended small intestines, and especially of the mesentery, were found to be very much injected. A few flakes of lymph were found adhering to the intestines. The intestine was thoroughly examined, practically through its whole extent, without any cause for the peritonitis being discovered. The abdominal cavity was irrigated and the wound closed. Three days later the infant died.

Eighteen hours after death the autopsy was made.

The body was that of a well-developed infant; rigor mortis was present.

There was an incised wound about 6 cm. long in the median line of the abdomen just below the umbilicus. This was partly closed at the ends by interrupted sutures, while from the middle projected a wick of gauze. This reached well down to the root of the mesentery, and was surrounded by coils of intestines, which were glued to the abdominal wall and to each other. There was no free fluid in the pocket drained by the wick. The adhesions between the coils of intestines could be easily separated, and lying between them was a little opaque, turbid serum in which were occasional flakes of lymph.

The head was not opened.

The lungs were of normal color, well retracted, with a few dark, slightly depressed areas. The pleural surface was smooth and the cavities normal.

The heart was normal and weighed 65 grammes.

The condition of the lower part of the peritoneal cavity has been previously described. The stomach was quite extensively adherent to the diaphragm along its anterior surface, and on carefully separating the fibrinous adhesions one point was noticed where the exudation was a little thicker and more adherent. Embeded in this, and apparently coming from the walls of the stomach, was a minute thread about 2 or 3 mm. in length. There was also a little more injection than elsewhere in the immediate vicinity of this spot.

On opening the stomach it was found to be generally normal, with the exception of a minute loss of substance surrounded by reddened zone opposite the place of greatest exudation on the outside.

This portion of the wall of the stomach was cut out, and after hardening in Zenker's fluid, was mounted in paraffin and a series of sections cut. As the result of the studies of these it appeared that there was an oblique passage from within outward through the entire thickness of the wall, and in it lay a foreign body. This was made up of a bundle of very small, irregularly rounded, structureless fibres, staining intensely with aniline dyes, but not with hæmatoxylin.

The edges of the mucosa were slightly rounded over from within outward, as if the original lesion had been in that direction. The cavity in the middle of the coat was partly filled with leucocytes and round cells surrounding the fibres, but not infiltrating among them, and nowhere did the foreign body project into the interior of the stomach.

After staining by Gram's method, large numbers of small rod and spherical bacteria were found on the peritoneal surface close to the thread. No cultures were taken at the autopsy, on account of the lapse of time after death.

The liver was normal in appearance and weighed 165 grammes.

The kidneys were pale and together weighed 35 grammes.

The spleen was dark red and weighed 15 grammes.

The pancreas, adrenals, and the genital organs presented nothing remarkable.

The chief interest in the case centers in the perforation and its cause. That the general peritonitis had started from this point there was little doubt, as the evidences of the inflammation were most extensive here and the exudation thicker and firmer. It is highly improbable that this could have been anything introduced at the time of the operation, for to have produced the lesions would have required several days, as shown by the thinned and somewhat everted mucosa. How the perforation took place from the inside is also hard to understand if this foreign body is nothing but a bit of silk thread, as its structure would indicate. It was suggested that possibly a threaded needle was swallowed, and had perforated, leaving a bit of silk behind, and the needle was overlooked among the coils of intestines. It certainly was not thought of at the time of the autopsy, and no especial search was made for it. Another suggestion is that it was a case of follicular ulceration, and the bit of thread had worked its way into that. But the loss of substance in the mucosa is rather less in extent than deeper in, and there is no evidence of any inflammation in the neighborhood that would warrant the assumption of such a process.

We are left, therefore, with the simple fact that the local lesions are all in the immediate neighborhood of the foreign body, and that the perforation and the secondary fatal peritonitis must be referred to it.

A CASE OF RECURRENT PARALYSIS OF THE OCULOMOTOR NERVE.

J. W. Sterling (*Montreal Medical Journal*, 1899, xxviii., 10) reports this case which came under his notice: Nellie R., aged 14, was first seen by me on May 12th of this year. The child complained of seeing double and of drooping of her left eyelid, which had persisted for the past two or three days. Four days ago she had what she called a severe bilious headache, limited to the left side of her forehead, and which lasted for three days. This was accompanied by vomiting, and on the second morning after the onset she saw double and could not raise her upper left eyelid. She had a similar attack three months ago in the same eye, the symptoms disappearing in the course of a week, and again previous to this, two years ago, after an attack of diphtheria, there was drooping of the left upper eyelid and double vision. There is a history of frequent sick headaches since early childhood, occurring nearly every month, but the double vision has only heen noticed during the past two years. She has had frequent attacks of sick headache and vomiting for two years, all of which have been accompanied by double vision, but without ptosis except on the three occasions mentioned. The patient tells me that near vision with the left eye has been defective for years, almost as far back as she can remember. The child is well nourished and of the fair type, rather undeveloped for her years. Mentally, she is bright and intelligent. There is no history of any serious illness. Her mother has been in an asylum four or five years, but there is no other family history of any importance, and there seems to be no family tendency to tuberculous infection. The girl has not yet reached puberty. Her condition on May 14th was as follows:

Paralysis of the left third nerve existed in all its branches, excepting that to the sphincter pupillæ, for although widely dilated, the pupil reacted sluggishly to light and on convergence, but the accommodation was absolutely paralyzed. The eye-ball was divergent in position. There was no paræsthesia in the area of the fifth nerve. Vision, right eye, $\frac{5}{5}$; pupil active and accommodation good; a low degree of hypermetropia. Vision, left eye, $\frac{5}{9}$; pupils sluggish, widely dilated, acommodation nil. With a spherical plus 5D she can read J.i, at eight inches. The light minimum as tested by Wallace's photometer is 4°. The fundi are normal. The field of vision shows a general peripheric contraction of 10 to 15 degrees when using a test-object 5mm. square.

The knee reflexes, etc., are normal, as are the general body functions.

On June 21st, only a slight paresis of the left internal rectus remained. The ptosis had disappeared; there was no divergence of the eye-ball; the pupil still reacted sluggishly to light, and the accommodation was still absent.

My patient forms a typical example of this rather rare malady. There was marked hereditary tendency to nervous instability on the maternal side. The attack of diphtheria would seem to have been the more immediate exciter of the oculo-motor paralysis, but we have the history of years of indistinct vision for near objects pointing to the early existence of cycloplegia. As to the pathological lesion one is in the dark, but, judging from the experience of others and the marked exacerbating type of disease, there can be no doubt as to a marked organic lesion being present, most likely in the nerve trunk.

INTESTINAL ORIGIN OF TUBERCULOSIS.

W. H. WEAVER (*N. Y. Med. Journal*, 1899, lxx., 522), after calling attention to the frequency of the occurrence of tubercle bacilli in meat and milk, says that the fact that the lesion occurs primarily in the lungs has led to the error of considering consumption a dust-borne disease, while anatomically and physiologically the lesion should be there. Milk, butter, cheese, and possibly meat and other infected food, are emulsified during pancreatic digestion in the intestines, and the finely divided particles carry the bacilli directly through the lacteals without local infection. This chyle, containing bacilli, together with the lymph from the whole lymphatic system, is poured through the thoracic duct into the left innominate vein, thence with the venous blood through the right heart directly to the lungs, where infection takes place.

It is known that dried germs are not necessarily virulent. If moist germs are inhaled, they find lodgment in the nose, mouth, or throat, and are swallowed with the saliva and mucus of the throat, thus passing through the lacteals with the chyle to the blood of the vena cava.

That fine particles of dust are carried into the alveoli is proved by the disease known as pneumonoconiosis, but it is doubtful if moist particles could be carried far beyond the larynx, and, if they did, infection would not take place in any case so long as the mucous membrane was intact.

The author concludes:

1. That the infection comes through food or moist germs inhaled and swallowed, and possibly through infection of tonsillar tissue.
2. In the great majority of cases the infection occurs in the posterior portion of the lung apex, that being the most vulnerable point, as a direct result of the discharge of infected chyle into the vena cava.
3. Should that portion of the lung apex be healthy, and not a suitable nidus for the germs, they may pass on with the current of the blood to find lodgment in some other area unless the blood has exerted its bactericidal power over them, when they may be removed by the action of the phagocytes (Klebs).

PRIMARY TESTICULAR MUMPS.

EDWARDS (*Jour. American Med. Association*, xxxiii., 963), says: An epidemic of parotitis prevailed in Richmond during the winter of 1898–'99, extending well over into the spring months of this year. During this time four cases of primary testicular mumps came under my care—all of them since the middle of January, 1899. Three of the four cases were in young men of fairly good health, who were medical students in the University College of Medicine. The fourth case was a young man who boarded in the house with one of these students. Other patients with ordinary epidemic parotitis were in the boarding houses with these students, but their attacks of parotitis ran the usual course, without noticeable incident worthy of record.

In none of the four cases just referred to could the most exacting inquiry elicit the history of impure intercourse, or of recent veneral disease, nor was there history of injury or traumatism about the generative organs. In short there was no recognizable cause for any disease of the contents of the scrotum—beyond the prevailing influence of epidemic mumps; nor had these patients had a previous attack of parotitis. There was a sameness in the clinical history of these four cases that makes a general description of the disease as it occurred in one a sufficient record for the others.

Chilly sensations running up the back, followed rapidly by rise of temperature—in one case reaching, in a few hours, about 103 F.—marked the onset. Besides an almost coincident development of headache and nausea, enlargement, hardness and tenderness of the testicle set in. In three, the left testicle was decidedly more affected than the right; in the fourth case it was hard to say which testicle was most affected. There were diffused lumbar pains in all the cases, and in one case the pain were so severe and peculiar that varioloid was suggested. In each the testicle was enlarged, hot and painful before the first twenty-four hours after invasion.

During the second and third days after this enlarged, painful, feverish condition of the testicle began, a very noticeable amount of swelling developed about the salivary glands—principally the parotids—which were sore on opening the mouth, or on pressure from without; but there was no abatement in the testicular trouble. The headache, lumbar pains, fever and nausea continued. The affected testicle continued to increase in size—in one case reaching to about three times its normal dimensions, and yet without material involvement of the epididymis, vas deferens, or other structure of the part. By the sixth day, the general signs and symptoms began to abate, and disappeared by the eighth or ninth day, so far as manifestations of the infection were concerned. In a few days more the enlarged tender testicles and the soreness extending up into the abdomen along the course of the spermatic cords gradually abated until recovery occurred. During the course of the disease there was no urethral discharge, no bladder irritation, no evidence of suppuration anywhere, nor did the involvement of the epididymis leave any sign of permanent change in the structure.

While the neck glands became secondarily involved in three of the cases, in only one case were the signs of parotitis at all prominent; and that case would have been spoken of as a mild case of mumps had it not been for the severe primary testicular involvement. In none of the cases were the testicular signs or symptoms modified when the salivary glands became secondarily affected. In each case effort was made, but without effect, to " draw the disease " to the neck glands—as the term is commonly used—by poultices, hot applications, etc.

As to treatment, guaiacol was used in two of the cases reported, without benefit; but phenacetin, with salol and digitalis, relieved much of the discomfort. Tobacco poultices over the testicles, and afterwards absorbent cotton, wet with 15 to 20 per cent. solution of ammonium chlorid applied to the scrotum, and rest in bed relieved pain and hastened recovery. Of course, suspensory bandages for the testes, etc., were used. No impairment of function seems to have resulted in any of the cases.

HYSTERIA IN CHILDREN.

Dr. E. E. MEYER (*Jour. American Med. Association*, xxxiii., 945), in a paper on Hysteria in Children, calls attention to the following facts in regard to the symptomatology:

Hysteria in children is very often monosymptomatic. One part of the body only is paralyzed or painful, a circumscribed spasm is found, not a general one. In addition to the well-known hysteric stigmata, the sensory disturbances, the anesthesia and the hysterogenetic and hysterofrenatic zones are generally found wanting. Severe epileptoid convulsions are also rare in children. The symptoms that are found are, however, generally severe and drastic in character, and never so slight and variable as found in the adult.

Hysteric symptoms are both subjective and objective. In every case we find some modification of psychic phenomena or alteration of personal characteristics. Mere presence of emotional conditions in a child, however, does not constitute hysteria. This error was made by the French school, whose members made the psychic stigmata of degeneration symptoms of infantile hysteria. Another error is to confuse hypochondriac symptoms with hysteric ones. The depressed, moody, self-conscious hypochondriac may be hysteric also, but not always. Hysteric persons are never afraid of disease, as are hypochondriacs, nor do they center all their thoughts on their mental and physical condition, but are rather careless, forgetful and varying in disposition.

Hysteric children are generally precocious and egotistic, impressionable and emotionally irritable. They react to the least excitement, may become suddenly moody and sad without cause, reject their little friends, mope for hours, or they will suddenly burst out crying, break their toys and stamp and rave. They are generally capricious and have depraved tastes—pica hysterica. Some are so stubborn as to be unbearable, others so violently affectionate as to be disagreeable. The longer |the disease lasts, the more does the child concentrate its mind on itself, the greater and more varied are its bodily ailments. Suggestion is the field they wander in, and more and more does imagination rule. The will weakens, abulia and metabulia result; as Paget aptly said: "It is not 'I can not' that dominates them as much as 'I will not.'"

In cases of hysteria in childhood we find flaccid paralysis, often with contractures. Paralysis of a single muscle of all four extremities is rare. It is generally a paraplegia or paralysis of a single limb. The face is rarely involved in the paralysis. Hysteric contractures present two important characteristics: 1. They are very marked, more so than in organic cases, resisting all passive movements, but relax in sleep or under chloroform. 2. They are painful to the touch; the joints being especially sensitive. The knee-jerks are rarely increased, and thus present a differential point to many organic cases.

Hysteric paralyses at once impress one by their variability as to the degree of paralysis; relapsing and improving; changing in location and integrity, without assignable cause. Muscular atrophy may occur, resulting from the inactivity of the part. When ankle-clonus is present, the thigh generally takes part in the motion, the clonus in fact being due to contraction of the calf muscles (Gowers).

The gait resulting from functional paralysis of the lower limbs is peculiar. It is jerky, not halting nor hesitating, the steps taken being small and noticeably forced. There is no spreading of the legs, as in organic inco-ordination, no high-step with foot-drop, as in infantile paralysis and multiple neuritis, no scythe-like motion as in organic hemiplegia, with the turned-in toes catching on the floor at each forward step. The muscles impress you as being unnecessarily used, rather than being useless. The anesthesia of hysteria is quite different from that accompanying organic lesions. It appears in the latter in longitudinal stripes parallel to each other; grouped anatomically. But in hysteric cases it is found in circles perpendicular to the long axis of the limb, or in irregular patches, a physiologic grouping, hence the names, " stocking " or "glove-type," given to hysteric anesthesia. It is true the first may occur in locomotor ataxia and multiple neuritis, and the second in syringemyelia and beri-beri, but very rarely and then gradually shading off. Patrick says that the limiting circle of hysteric anesthesia changes even within a few minutes, so that an examination a short time after a previous one will often give results differing one to two inches from a previous one. In children hyperesthesia is perhaps more often found than anesthesia.

Astasia and abasia are often found in children. These occur much more often in children than in adults. These names apply to the conditions in which the muscles of the legs can be used, when sitting or lying down, but are unable to be used for walking or standing. They act as if they had forgotten how to walk or stand. We have a spastic, a paralytic and a choreatic form of atasia-abasia.

Another hysteric paralysis of childhood is aphonia. It is characteristic that they are able to cough or sing, while not being able to speak. Hysteric stuttering is also often observed. We often observe choreic movements in hysteric children.

Facial grimaces and conditions similar to convulsions are often seen in hysteric children. The graver forms of spasms and hysteric attacks, as described originally by Charcot, rarely are, if ever, seen in children of this country. Bruns, in Germany, claims that they occur as often in children as in adults. In all such hysteric attacks, consciousness is rarelly entirely lost, and suggestions offered during attacks are often followed. Epidemic cases are more rare than in former centuries, but still occur in boarding schools and pensions, and in isolated villages. A particular danger in the recent revival of hypnotism, lies in the production of such epidemics. Hysteric coughs and tachypnea are also observed in children's hysteria. Although sensory disturbances are rare in childhood, they are occasionally observed.

Neuralgia occurs rarely in children, except the hysteric joint neuralgias. Pressure causes pain, while forcible apposition of the articular surface does not. There is no deformity, no temperature elevation, while the joint is freely movable under chloroform. Ocular disturbances of hysteric origin are so difficult to diagnose in children when they occur, which is rarely, that they need not be discussed.

Digestive disturbances, anorexia, and vomiting may occur. Incontinence of urine is often of hysteric origin. When necessary to exclude epilepsy, the different stigmata of this disease, the involuntary micturition, biting of the tongue, idiotic facies, peculiar aura, elevation of temperature, etc., and the stigmata, etc., of hysteria will furnish a differential diagnosis in most cases.

IMPETIGO CONTAGIOSA.

UNNA and MDE. SCHWENTER TRACHSLER have subjected this common ailment to a critical examination (*Monatsch. f. prakt. Dermat.* Hamburg, 1899, Nos. 5, 6, 7, 8). The historical portion is of much interest, and not only reflects the gradual evolution of ideas regarding it since Tilbury Fox described it as a separate disease in 1862, but enables Unna to indicate wherein his own opinions have undergone change subsequent to 1880. The authors desire to replace the designation impetigo vulgaris for that hitherto employed, in order to facilitate its discrimination from other less frequent impetigines. It seems, however, a pity to abandon an epithet which, besides having use and wont, really connotes the main element of the disease, its ready communicability. The characters of impetigo contaigosa are so constant, and manifest so few variations, that it is easily distinguished clinically from other similar skin affections, even from the rarer impetigines, such as those due to staphylococcus and streptococcus. The primary eruption consists in small red, isolated points, on which, in course of from twelve to twenty-four hours, minute, centrally placed, clear vesicles form. In some of these the contents continue clear, in others they assume a milky aspect in one or two days. But whether or not, this primary vesicle may abort, drying up into a crust the size of a mustard-seed, which, on separating, leaves a red stain. In most cases, in course of from three to five days from the first, large concentrically disposed crusts appear rather suddenly. These, when typical, are translucent, horny, of a honey yellow, giving the impression of being composed of pure serum. This holds at least for the cheeks, chin, and forehead; but in addition, in uncleanly individuals, near the mouth, ears, or on the hands, there are greyish green, purulent, or brownish, blood-stained ones. The crusts may persist a long time, enlarging slowly. If displaced by scratching, or otherwise, the serum which wells up, gives rise to new ones; not so bulky but wider. The origin of these larger crusts is due to the superadded formation of secondary vesicles, quite superficial, which insinuate themselves directly under the horny layer. In some cases this is owing to streptococci having become mingled with the impetigo cocci. When the crusts have fallen off, and the subjacent erosion becomes cornified, a round, smooth, red mark remains, an evidence of the marked dilatation of the vessels and the thinning of the epidermis. When it attacks the scalp, it is often confused with the crusted eczema of that region met with in children. Here the eruption is more scattered, except on the occiput. The primary vesicles are seldom seen, while the secondary produce very thick crusts; for they soon burst, and the serum coagulates round the hairs. If the hairs are extracted, they show a much swollen root-sheath. The impetigo crusts afford a favorable sphere for pediculi. But these parasites are but an accidental complication, have no connection with its etiology, and are only met with in a proportion of cases. Only very occasionally is the disease encountered on the mucous membrane of the lips, gums, tongue, or throat. Another rare complication is with purulent discharge from the external ear; this, though evidently in relation to impetigo contagiosa, does not cause any affection of the drum, nor produce perforation or otitis media. Very frequently, yet apt to be overlooked, is consecutive swelling and tenderness of the submaxillary glands when the face is implicated, of those of the neck when the scalp. There is no interference with the general health, any feeling of illness previous to the eruption is exceptional. Should there be, the disturbance is due to complications, and not to the impetigo. Itching in uncomplicated instances is but slight, and chiefly at an early age. Infection most commonly occurs between three and ten years of age, either at school or by playing with those affected. Impetigo caused by true pus-producing staphylococci exhibits vesicles which are really epidermic abscesses, appearing as hemispherical greenish yellow pustules, with an inflammatory areola. These last long, and form a small and thin crust. They are infrequent, isolated, occur over the whole body, and principally in adults. They are followed by deeper lesions, as boils or abscesses. The analogy with impetigo streptogenes, so rarely met with, and of such evil prognosis, is chiefly theoretical In this there is in the main a serous exudation, which but slowly coagulates; so that the loose, grayish yellow, muddy, and for the most part large, vesicles persist long. These may be diffused over the trunk in children, and lead locally to necrosis of the skin, and generally to sepsis. In treatment it is to be borne in mind that the chief cause for the origin and propagation of the impetigo vesicles is an abnormal soakage of the epidermis. Thus it is that the skin in the neighborhood of the mouth and nose in little, ill-tended children, so continually wet with secretions, or that close to eyes affected with conjunctivitis from which tears overflow, are the areas of predilection. Hence, after the crusts have been cautiously removed with a blunt instrument, the hair, if the scalp is involved, being cut, the parts are well washed with soap and warm water dried, and several times a day smeared with a zinc sulphur paste, which exerts a much more desiccating effect than an ointment. By selecting crusts as free as possible from impurity, the authors have been able to isolate a micrococcus which assumes both an ochre and a white color. This has been inoculated with success, and produced the characteristic features of impetigo contagiosa. This in certain respects resembles both the staphylococcus and the streptococcus, but there are differences which are carefully formulated. There appears no reason to doubt that the true source of the disease has now been discovered, though its entire life history has not yet been worked ont.—*Edinburg Medical Journal*, 1899, vi, 380.

TREATMENT OF FERMENTAL DIARRHEA.

MORSE (*Boston Medical and Surgical Journal*, 1899, Aug. 3d), in an article on the Acute Diarrheas of Infancy, says, in discussing the treatment of Fermental Diarrhea, the first indication for treatment is to remove the cause, namely, the micro-organisms and their toxic products. In mild cases, a purge is often all that is necessary. Castor oil is perhaps the most satisfactory when there is no vomiting, although calomel is applicable in all cases, and is altogether the best when there is vomiting. A purge is always necessary, as it is the only way in which the small intestine can be reached. In the severe cases and in all cases where vomiting is an important symptom, it is advisable to wash out the stomach. This is a simple procedure in infants, causing them but little discomfort or exhaustion. An ordinary soft-rubber catheter makes a very satisfactory stomach-tube, especially if the tip is snipped off and rounded by heat. Normal salt solution, or a solution of borax or bicarbonate of soda are somewhat better than plain water. If thirst is a prominent symptom it is well to leave a few ounces of water in the stomach. In the more severe cases it is also advisable to wash out the lower bowel. This is done by passing a rather large soft-rubber catheter, with the end prepared as for washing out the stomach, high into the bowel. Several quarts of liquid from a fountain syringe, not more than three feet above the patient, should be allowed to run in and out. The same solutions may be used here as for washing out the stomach. The importance of thoroughly emptying the alimentary tract from both above and below, as well as by purging, can hardly be overestmated.

Unfortunately, it is impossible by the methods detailed above to entirely rid the alimentary tract of bacteria. Enough remain, if the conditions are favorable for their multiplication, to keep up or cause a recurrence of the trouble. The condition most favorable for their multiplication is the presence in the intestine of a suitable culture medium. This medium enters the intestine only through the mouth. Hence the next indication for treatment is to prevent the ingestion of any food which will provide such a suitable culture medium. For this reason it is best to cut off all food for at least twenty-four hours, giving only sterile water. The brilliant results claimed for barley water and rice water in the treatment of the early stages of these cases are probably due to the fact that they contain so little beside water that their use amounts practically to starvation.

Unfortunately, again, temporary starvation rarely suffices to diminish the number of bacteria to such an extent that they cannot cause trouble. The patient, however, demands and must have nourishment. The problem is to give it in the least harmful form. This is, of course, the form most unsuitable for the growth of the micro-organisms causing the trouble. The odor of the stools. as being characteristic of acid fermentation or albuminoid decomposition, would seem to offer some means of assistance. Unfortunately, this distinction is rarely possible or reliable except in the case of very sour stools. Here an albuminoid diet, with an almost complete exclusion of sugar, is indicated, and gives satisfactory clinical results. In the majority of cases, however, the process seems to be a more complex one, and there is no indication for or against any special element of the food. It must, therefore, be selected on general principles. Foods which are principally digested and absorbed high up in the alimentary tract seem, for a time at least, most suitable. I have found albumin water, or somatose, given in ten or fifteen grain doses in water most satisfactory.

There seems to be a very general feeling that milk in any form is unsuitable for these cases, on the ground that the pathogenic micro-organisms are usually originally introduced in the milk, and therefore should thrive better in it than in any other medium. The usual custom seems to be to employ some form of starchy food. I cannot see why, however, if starchy food is bad for a well baby, it should be any less bad for a sick baby. I feel that the favorable results obtained from the use of these foods in these diseases are to be explained by the weakness of the foods. It is to their dilution that they owe their success. I certainly have every reason to be satisfied with the results obtained by feeding these cases with dilute milk mixtures after the initial period of starvation.

After the preliminary period of complete or partial starvation, therefore, the child should be given a mixture prepared from *fresh* milk, *low* in *all* percentages, highly alkaline and pasteurized. It is better to give small amounts frequently than large at long intervals. Experience only can teach just what percentages are to be given in individual cases. In general, the percentage of sugar may be comparatively high, while that of the proteids must be comparatively low. The fundamental principle, however, is to give a dilute food. As the patient improves, the percentages may be increased, together or singly, and the intervals of feeding lengthened until the strength and intervals suitable for a normal infant of the given age are reached.

As already stated, the first indication for treatment is to remove the cause. After a considerable and varied experience with many drugs, including many of the newer preparations, the author has discarded all but bismuth. This is best given as the subgallate. The subnitrate is almost as satisfactory. Either to be of much use must be given in considerable doses, not less than one or two drachms in twenty-four hours.

Certain special symptoms due to toxic absorption may require special treatment in addition to that for the removal of the cause. Excessive vomiting is best treated by stomach washing, and hyperpyrexia by cold bathing or packs. Extreme restlessness usually yields to bromides, but morphine may be necessary. If it is used, it is best given subcutaneously. Prostration and collapse require stimulation along the usual lines. Brandy and strychnia are most useful, and must often be given under the skin.

PEDIATRICS

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ORIGINAL ARTICLES

VULVO-VAGINAL CATARRH.

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THE subject under discussion "may appear to many of you trite and stale; and so indeed it is, but under the circumstances the very staleness is a warrant for repetition; the triteness makes earnest reiteration a necessity."

Vulvo-vaginitis may be catarrhal in character, traumatic in origin, or occur in patients afflicted with scrofula or anemia. In other instances it is of an infectious nature. In practice two classes are recognized.

First.—The simple catarrhal, non-infectious.

Second.—The infectious.

The discussion of the first variety, the simple catarrhal, will be brief. It is caused by the irritation of acrid discharges and the prolonged contact of soiled diapers, the decomposition of secretions and want of cleanliness, the presence of dirt or foreign bodies, by seat worms, masturbation, traumatism, attempts at rape, and by anemia. Generally mild in character, the process is ordinarily limited to the vulva, the urethra and vagina escaping. Upon the removal of the cause, the catarrh disappears, and but little treatment aside from cleanliness is required.

Infectious.—In this category are included the gonorrheal, syphilitic, diphtheritic and tubercular forms; exceptionally noma or erysipelas may give rise to the disorder. Spaeth, a number of years ago, directed attention to the fact that the purulent discharge frequently seen after scarlet fever was not due to the micro-organism of the disease, but was caused by an accidental gonorrheal invasion.

In the remarks to follow the attention will be directed wholly to a consideration of the gonorrheal variety. Of frequent occurrence in dispensary practice and in thickly populated districts, its exact nature, unfortunately, is often overlooked.

A little care in the examination readily reveals the simple or infectious character of the discharge. If any difficulty is experienced the microscope will determine the presence or absence of the characteristic gonococcus. Clinically the ardor urinæ and the disinclination of the child to pass water because of the pain, the irritating character of the secretion, which wells up from the vagina and the urethra, the inflammation and erosion of the skin, with possible pelvic and abdominal pains, and constitutional disturbances generally justify the suspicion that a gonorrheal infection has taken place—the certainty of which can be readily established by a bacteriological examination. The disorder is by no means infrequent, it may occur at any age, for it has been observed in the infant a few days after birth, the infection having taken place from the mother during the act of parturition, or subsequently through the carelessness or ignorance of the monthly nurse.

Though the infection in the greater number is accidental, now and then it is of venereal origin, or follows criminal assaults. The popular belief that an infected person can be quickly cured, if brought in venereal contact with a virgin, explains a number of cases in young girls. A similar explanation holds good, now and then, in young boys.

In children, as in adults, the dangers are numerous, not only to the patient, but to others; complications are frequent. The infection can be transmitted by means of sponges, towels, bed clothing, etc.

Clinical thermometers, not thoroughly cleansed, have been accused of transmitting the disease. When a case occurs, unless proper precautions are observed, all the females in a family may be affected. Not infrequently, in patients presented in the Children's Department of the Vanderbilt Clinic, the mother and several of the children are afflicted in the same way. In institutions it may spread rapidly, and appears epidemic in character. It is a good plan under such circumstances to isolate the cases. Additional nurses should be assigned, and their attention devoted to the little patients. During the existence of the trouble strict isolation should be insisted upon, the patients should be quarantined until the microscope fails to reveal the infectious organisms. The vulvo-vaginal glands do not appear to be involved with any degree of frequency during childhood.

In the absence of due prophylactic measures the eyes may become infected, and ophthalmia with its dangers follow. Infection along the lymphatics gives rise to inguinal adenitis, which may terminate in resolution or go on to suppuration. The trouble may travel by way of the urethra, involve the bladder, ureters, pelvis of the kidney, and in neglected cases the kidneys themselves may be implicated. Not infrequently the infection extends to the uterus, gives rise to endometritis, metritis, salpingitis, ovaritis and localized or general peritonitis. In bad cases the latter is apt to be virulent, terminating fatally in a very short time. Such cases the writer has described* (*Archives of Pediatrics*, Vol. 6, 1889, page 887, and Vol. 10, 1893, page 333). In others the infection being in type milder, the peritonitis is not so grave; serum or pus may appear free in the abdominal cavity or become encysted. Finally infection may take place through the blood, causing general sepsis or pyemia with a fatal termination.

Gonorrheal rheumatism is not uncommon in children. The manifestations are similar to those in the adult.

1. Most commonly there is the acute gonorrheal arthritis, a single joint being involved, particularly the larger joints or those but rarely attacked in ordinary rheumatism (sterno-clavicular, vertebral, etc.). Other forms are:

2. Chronic] hydrathrosis, usually monarticular, which shows itself in the knee, usually without any previous evidence of inflammation.

3. Arthralgia, wandering pains about the joints persisting for a long time.

4. Polyarticular variety, with occasional cerebral and cardiac complications. The endocarditis may be of the ulcerative variety, a manifestation of the general sepsis or of a milder type, not dangerous to life, but cripping the valve.

5. The bursal and synovial variety, the tendons and sheaths,

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* The studies of Cushing (Bulletin of Johns Hopkins Hospital, May, 1889) are instructive and important. The inflammation has been variously regarded as mixed, infectious and chemical inflammations. The cases reported being convincing evidence of the existence of a diffuse general inflammation of the abdominal cavity caused by the gonococcus.

the bursæ and periostium being involved at times, with and often without inflammatory reactions. If a mixed infection takes place, suppuration may occur in the joints. Now and then the endocardium and the serous membranes generally may be involved.

In this connection the following is of interest: In 1885, and in another recent contribution, R. Clement Lucas directed attention to a form of a joint disease, occurring as a complication of ophthalmia neonatorum. "He argued that just as gonorrhea in adults is capable of producing sometimes an intense arthritis and at others a subacute synovitis, so the same virus inoculated during parturition on the conjunctiva of infants may be productive of analogous joint affections a few weeks after birth."

Twenty-three cases, chiefly from foreign sources, are referred to in the paper presented before the Royal Medical and Chirurgical Society, January 24, 1899. The presence of the gonococcus in the secretion of the conjunctiva and in the fluid aspirated from the inflamed joint established the character of the process. The tendency is toward recovery; when suppuration occurs, mixed infection has taken place.

As a sequel, the child may be a sufferer from recurring attacks of pelvic inflammation, followed later by difficult menstruation, sterility, and a state of chronic invalidism.

Treatment.—The patients should be isolated and quarantined to prevent the spread of the infection. The necessity of a strict adherence to this rule is evident to anyone who has experience in this line. During the early stages, when the inflammatory symptoms are marked, absolute rest is essential, and cold applications over the hypogastric region are required. The urine should be rendered alkaline and bland, light diet allowed, and the bodily functions kept in order. Irrigations carefully made are beneficial, and should be given two or three times daily. If the inflammatory symptoms about the urethra and vaginal orifice are intense and the pain excessive, cocaine may be employed locally.

The efficacy of the treatment will depend upon a thorough and careful attention to the details in carrying out the local measures. The ardor urinæ and vesical tenesmus may be relieved by warm sitz baths, two or three times daily, the child being instructed to pass water in the bath.

Careful attempts at irrigation may be made at an early date; if a great deal of swelling and tenderness exist, a weak solution of cocaine should be applied beforehand, followed by irrigation with a warm alkaline or a mild antiseptic solution. A word as to the method, a small catheter should be attached to a fountain syringe suspended about two feet above the level of the body, and after the external parts have been thoroughly irrigated, about two inches of Jacques' or Nelaton's instrument should be carefully passed through the hymen into the vagina and the injection slowly made—the utmost gentleness being exercised to avoid any trauma.

If there be no unfavorable reaction, a weak solution of potash permanganate (1–4000 to 1-1000) or nitrate of silver (1–2000 and later on 1–1000 and even stronger) may be tried next. If the latter be attended with much pain, a solution of common salt injected will afford relief at once. Comparatively large quantities are required, from one pint to a quart. At the outset two or three injections should be used daily, subsequently one a day, and finally two or three a week. In the beginning weak solutions are used; later on, to hasten the cure, stronger preparations may be allowed. Permanganate of potash and nitrate of silver, from their well known penetrating effects, give the best results and are to be preferred. Argonin and protargol have been highly recommended of late. The mercuric bichloride is not efficient; its action is superficial, an insoluable albuminate forming.

Sulphocarbolate of zinc may be employed, weak solutions of carbolic acid (ʒi to Oi) are soothing and serviceable. After irrigation, the external parts are dried and covered with boric acid and zinc oxide omhueuf (1-8) and a pad of absorbent cotton or gauze applied.

The dressings are not to be thrown away, but should be burned to prevent accidental infection in others. As the urethra is nearly always involved, local treatment with a weak solution of argentum nitrate or potassium permanganate may be employed, and the oil of yellow sandalwood given internally.

Pain in the hypogastric region, over the tubes or ovaries, or abdomen, generally indicates a spread of the inflammation to the uterus, Fallopian tubes, ovaries, etc., with a probable local or general peritonitis. Rest in bed, cold compresses, etc., are then indicated; the further treatment will depend upon subsequent developments.

The question of diagnosis and prevention of the infection may assume medico-legal importance. Some time since a child was admitted to a hospital (clean and free from any discharges); when she went home she was found to be suffering from a virulent vulvo-vaginal catarrh, and shortly after a purulent conjunctivitis developed. The diplomacy and tact of the attending physician, who gave me the facts subsequently, prevented an annoying suit for damages. As a matter of personal knowledge, not sufficient care is observed, in fact too little importance is attached to the existence of a purulent discharge from the genitals in girls.

An early recognition of the true nature of the discharge and energetic radical treatment will do much in preventing some of the untoward results. Many a little patient grows up and suffers in consequence of an accidental infection. The subject of prophylaxis is paramount to those who have followed the subsequent progress of these cases and have seen the sufferings and chronic invalidism entailed, because of a failure to recognize the cause and prevent the unfortunate consequences.

All cases of vulvo-vaginal catarrh should be carefully examined bacteriologically for the characteristic cocci; if found, the appropriate remedies should be employed early and effective prophylactic measures adopted. It must not be forgotten that the disease is rather intractable. Treatment is not limited to a period of a few weeks, it must be continued as long as the microscope shows the presence of the gonococcus in the discharge. In a number of cases, particularly those attended by hypogastric and pelvic pains, it will be found that the discharge will cease in a short time when treated, to recur in a week or so after the irrigations are discontinued. The recrudescence is, no doubt, due to renewed infection from above. Under such circumstances tonic treatment must be resorted to, the child's general nutrition improved, and the injections repeated at intervals of several days or a week. The various complications must be met as they arise and treated on general principles.

209 East Seventeenth Street.

A NEW CLAVICLE SPLINT.

By Henry Ling Taylor, M.D.,
New York.

THE clavicle splint shown in the cuts (Figs. 1 and 2) was devised by the late C. Fayette Taylor, and successfully used by him many years ago in a number of cases. It consists of two convex, pear-shaped, hard rubber pads, fitting into the depression in front of the shoulders, and joined by a rigid adjustable bar, curved forward so as not to touch the chest. Each pad carries a buckle above and a strap below. The back piece to which the front piece is buckled consists of a stiff piece of sole leather, lined with chamois and a layer of padding, and provided with straps at the upper corners and buckles at the lower. The back pad is large enough to overlap the posterior borders of the scapulæ an inch or more, and to reach from the root of the neck to well below the axilla. When applied to a case of fractured clavicle the splint is set as wide as possible and buckled snugly into place. This forces the shoulders back by a double action, the backward pressure on the humerus of the pads in front and the forward pressure of the large pad behind upon the inner margins of the scapula. After the apparatus is settled into place the curved bar in front can always be lengthened an inch or more, and a wider splint is invariably required than the surgeon expects, unless he has had previous experience. When properly applied, the arm can be used, at least during most of the treatment; and it is the only splint known to me which permits the use of the arm. A sling is necessary only for a few days, and sometimes not at all. The apparatus acts as an independent shoulder-girdle, assuming the function of the clavicle.

The writer has treated a number of cases of fracture and dislocation of the clavicle with this apparatus during the last eighteen years, and has always found that it held the fragments in better position, and was more comfortable for the patient than any other dressing. The patient wears his ordinary clothes, and goes about his business as usual. At the request of Prof. Seneca D. Powell, I applied this splint abou

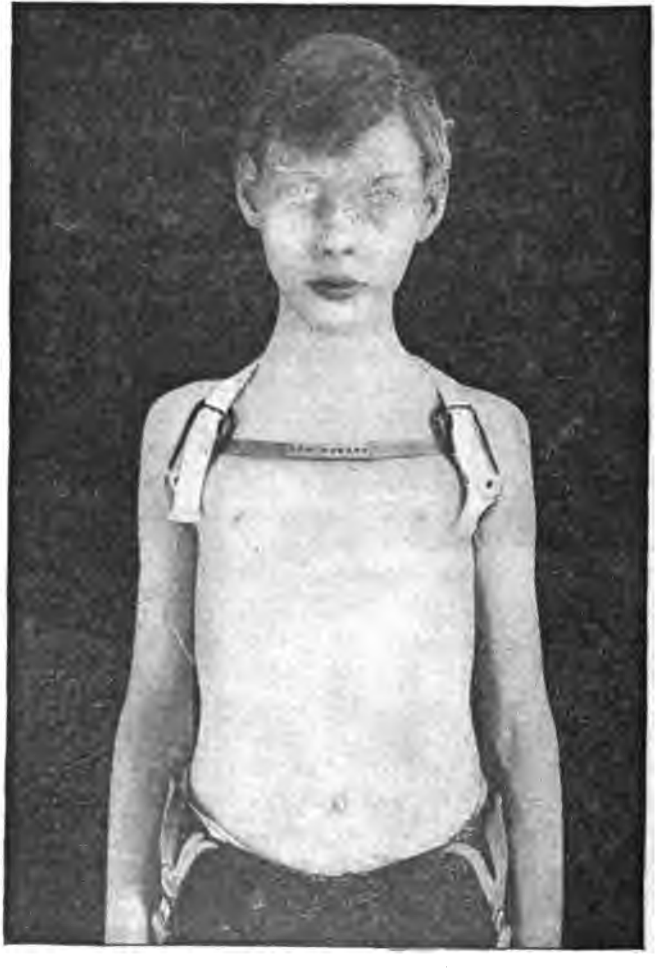

FIG. 1.

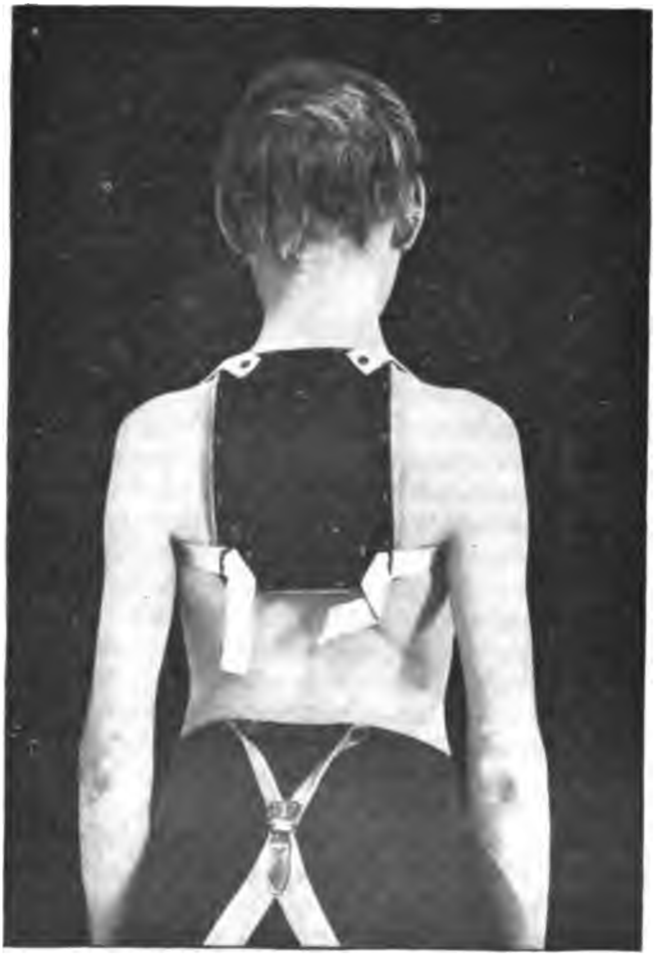

FIG. II.

three years ago to his son, who had sustained a very bad fracture of the clavicle from a fall in a bicycle race. The young man was in such pain that he could not stir under any dressing that Dr. Powell could apply, but got up and walked about in comfort so soon as this splint was applied. The case and apparatus were afterwards shown, and the method warmly endorsed by Dr. Powell at a meeting of the Northwestern Medical and Surgical Society, which was reported in the *Medical News*. It has also been used with satisfaction by a few others, but deserves to be more widely known.

60 West Fifty-fifth Street.

Taking Temperatures in Children.—The temperature in all children under school age should be taken in the rectum. The thermometer should be thoroughly cleansed and lubricated with a little vaseline. The best position for this purpose, and one which is easily maintained in a refractory child, is as follows: The child is placed upon its side with the back toward the physician, either on a bed or table or upon the lap of the mother. It is held by one hand being placed upon the shoulder, holding the upper part of the body down, and the other upon the child's knees, holding them down in the same way. The thighs and knees are flexed. The thermometer can now be introduced without any trouble. In this position the movements of the child's body will have the least amount of influence on the position of the thermometer. When a refractory child is placed on its belly, or, worse yet, upon its back, for the purpose of measuring its temperature, the violent jerks of the body and kicks with the feet interfere with the thermometer and make this little procedure so disagreeable that the physician is apt to shirk it rather than be compelled to witness the scene.—*N. Y. Lancet*, 1899.

THE STATE CARE OF INDIGENT, CRIPPLED CHILDREN.*

By ARTHUR J. GILLETTE, M.D.,
St. Paul, Minn.

AFTER experience with two sessions of the Legislature, I am of the opinion that the much-abused politicians are reasonable and humane after all. If their attention is brought to a bill, the purpose of which is the alleviation of human suffering, and the benefit of the State for which they serve, they give heed, and assist the cause in every way possible.

In the winter of 1897, there was introduced into the Legislature of Minnesota, a bill appropriating five thousand ($5,000.00) dollars a year, for two years, for the relief of indigent, crippled children of the State of Minnesota. This, I know, will impress many of you who are connected with such large institutions as a very small amount indeed, but you must remember that in the West there existed no such thing as a Hospital for Crippled and Deformed Children, and we had no such law in the United States—or in the world, for aught we know, as a precedent. Further, we were given to understand that if this amount was judiciously and beneficially expended, the law would become a permanent law in the State of Minnesota, so to us it was a great achievement.

It is significant indeed that the most eloquent advocate of this bill was a young woman suffering from a neglected and badly deformed lateral curvature of the spine. Notwithstanding this obstacle, Miss Jessie Haskins gained a college education, and naturally her pleading was doubly forcible. Significant, too, is the fact that Dr. Henry Ling Taylor, son of Dr. C. Fayette Taylor, gave to this young woman her first directions in this undertaking.

I will not bore you with the details of our experiences in trying to impress upon the legislators that this bill had but one object, that of the care, relief and cure of the poor, crippled children of the State of Minnesota, who, if they were not already, would finally become wards of the state; nor the surprise expressed by the members of this legislative committee when assured that these children would be cared for by physicians and surgeons free of charge; nor how proud I was of the profession when guaranteeing this, knowing full well that I could deliver the goods promised. All this was finally rewarded by a promise to introduce a bill. The question then arose, in whose hands should the institution be placed. Realizing that in order to have the bill passed, it should be fostered by a body already recognized for its efficiency, we advised with members of such boards, and were either flatly refused, or were met with such indifference that we felt sure would result in the failure of the institution should they accept the charge.

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* Read before the American Orthopedic Association, June, 1899.

It was finally decided to place it in the hands of the Regents of the University of Minnesota. The only possible claim we had on them was because of the Medical Department of this University, the faculty of which department, it was generally understood by this Legislative body, was composed of representative members of the medical profession, giving assurance that the children would have the best of care.

And the following bill was passed:

Chapter 289, General Laws of Minnesota for 1897.

An act to provide for the care and treatment of crippled and deformed children.

Be it enacted by the Legislature of the State of Minnesota:

SECTION 1. That the Board of Regents of the State University are hereby authorized and empowered to make provision for the care and treatment in some hospital or hospitals within ten miles of the State University for any indigent children who may have resided within the State of Minnesota not less than one year, who are crippled, or deformed, or are suffering from disease, through which they are likely to become crippled or deformed. They shall make provision for the maintenance and care of such children, on such terms as may be agreed upon between the said Board of Regents and the managers of such hospital or hospitals.

SEC. 2. The children so provided for shall receive medical and surgical treatment by the members of the staff of the Medical College of the University, and the members of said staff shall receive no extra compensation for such medical or surgical treatment.

SEC. 3. The said Board of Regents shall adopt such rules and regulations as they may deem proper and necessary for the admission, discharge, care, treatment and government of such children.

SEC. 4. There is hereby appropriated out of any money in the State treasury, not otherwise appropriated, the sum of five thousand ($5,000.00) dollars for the fiscal year ending July 31, 1898; and the sum of five thousand ($5,000.00) dollars, for the fiscal year ending July 31, 1899, or so much thereof as may be necessary for the use of the Board of Regents in carrying out the provisions of this act.

SEC. 5. This act shall take effect and be in force from and after its passage.

Approved April 23, 1897.

Pursuant to the provisions of this law, the Board of Regents undertook the care of the crippled and deformed children of the State of Minnesota.

After a careful examination of all the hospitals of St. Paul and Minneapolis by the committee appointed by the Regents, and after receiving bids from each of them, a contract was entered into with the Board of Control of the City and County Hospital of St. Paul, by the terms of which the Board of Control agreed to set apart a ward in its hospital for the exclusive use of the children who may be received under the provisions of the law, and to provide and care for them as patients are ordinarily cared for in first-class hospitals, including nurses' attendance, food, washing, bandages and medicine, and in fact everything that the children need, except physicians' attendance, and braces, or mechanical appliances.

The Board of Regents pays the Board of Control for the services above mentioned, $3.75 per week for all children between two and twelve years of age, and $4.50 per week for children between twelve and sixteen years.

The rules for admission were briefly—that the child must be under sixteen (16) years of age, and amenable to treatment, that the child must have resided in the state not less than one (1) year, and that the parent, guardian, relative, next friend, or other person, shall make an affidavit, stating name and age of child, etc., and also make an affidavit as to financial condition. Accompanying this application must be a statement from the family physician regarding the history of the case as to the disease, present condition and previous treatment; also his opinion as to their ability to pay for treatment.

We had a double reason for insisting upon the physician's statement. First, we wished, of course, to know the nature of the disease, and whether, or not, it could be benefited, before taking a long journey to a hospital; and, furthermore, we did not wish to take a case away from a physician who was treating it, or who felt he could treat it.

The educational feature is of great importance as the members of the Association well know that it sometimes takes years to effect a cure; therefore, next to the treatment is the necessity of educational advantages. Our first appropriation was so small, we went begging for some one to do this, and succeeded in securing the services of Miss Antoinette Choate, who, with the assistance of a corps of young women, undertook the kindergarten instruction.

The Board of Regents who took charge of this work very reluctantly, at the expiration of the first two (2) years, signified their willingness to continue the same, and I must say that the Chairman of that Board, Judge Stephen Mahoney, was not only willing, but enthusiastic. In short, the Board of Managers, Superintendent of the Hospital, Teachers, Board of Control, House Surgeons and Nurses, every one who has in any way come in contact with this work, has become interested at once, and helped it in every way possible.

The Board of Control of the City and County Hospital, who contracted to give us only wards, finally set aside a building for the exclusive use of these children, and to-day this building is so over-crowded, that we have been obliged to place some of the children in the wards of the main building.

When the members of the Legislature of 1899 visited this Hospital, they were of one mind, and the Minnesota State Hospital for Crippled and Deformed Children is considered an established institution, and this legislative body unhesitatingly appropriated sixteen thousand ($16,000.00) dollars, to continue the work until the meeting of the next Legislature.

I wish to acknowledge the very important part the Orthopedic Institutions of the East played in this work, for it was upon their statistics that we based our arguments of the practical side of the work.

INDIGESTION IN INFANTS AND CHILDREN.*

By James H. Taylor, AM., M.D.,
Indianapolis, Ind.
Professor of Diseases of Children and Clinical Medicine in the Medical College of Indiana.

INASMUCH as indigestion is often due to a lack of knowledge of the digestive organs in their normal state, I shall preface my remarks with a few suggestions on the subject of digestion. When the surgeon attempts to dress a fractured ulna, he bares the uninjured member for the purpose of noting the normal conditions. It is just as essential that we familiarize ourselves with the apparatus of the infant's digestion in health before we endeavor to deal with these parts in disease.

Investigations have shown that the average capacity of the infant's stomach at birth is 1 ⅕ ounces—

At four weeks it is	2 ounces
At three months it is	4½ ounces
At six months it is	6 ounces
At nine months it is	9 ounces, etc., etc.

The above must be borne in mind when considering the etiology of indigestion.

The only elements of food acted on in the stomach are proteids. These are changed into acid albumin, albumoses, and peptones, and this action is supposed to be accomplished through the agency of the pepsin and acid of the gastric juice.

According to Krueger, pepsin is present at birth and even as early as the fourth month of embryonic life. Holt says: "The reaction of the stomach in fasting is acid, and at this time free hydrochloric acid can be demonstrated. Following a meal of human milk, it is alkaline; after one of cow's milk, it is acid or neutral."

Many good observers claim that very little digestion is carried on in the stomach—that it is more of a reservoir into which the milk is received. It is further claimed that the milk passes rapidly into the intestine, and that in from thirty minutes to an hour after a meal of human milk the stomach of a young infant is often found empty. Where cow's milk is used, a half hour longer is required. Holt states in substance: "In the intestine the proteids, carbohydrates, and fats are acted on by the pancreatic juice. The trypsin, which is active only in the alkaline medium, converts the proteids into peptones. In most cases a large part of the proteids passes but little changed into the intestine. The diastatic ferment of the pancreas has the power of converting starch into sugar. This action, however, is feeble during the first six months. The pancreatic juice actively emulsifies fat, even at birth. The functions of the liver, as indicated by its large size at birth, are important in digestion. Bile assists in the digestion and absorption of fats; it also acts as a stimulus to peristalsis, and in this way aids in the absorption of all kinds of food. Its diastatic action upon starch is very feeble.

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* Read before the Mississippi Valley Medical Association at its session in Chicago, October 5, 1899.

"From the stomach the absorption of water, salts, sugar, and peptones may take place directly into the blood. In addition to these elements, fat is absorbed in the small intestine by means of the villi and the simple follicles of the mucous membrane. There is little or no digestive activity in the large intestine, though sugar, salts, and peptones may be absorbed with moderate facility.

"Even in healthy nursing infants complete absorption takes place only in the milk sugar. From 2 to 5 per cent. of the proteids and fats taken passes through the intestinal canal. In infants fed upon cow's milk the residue is from 1 to 3 per cent. greater. In cases of indigestion the food residue is first in the proteids, next in the fat, and least in the sugar.

"Two varieties of bacteria—the bacterium lactis ærogenes and the bacterium coli commune are constantly present in the intestinal tract. Whether these are beneficial or prejudicial to healthy digestion has not been definitely determined."

With the foregoing in view, let us turn our attention to disordered digestion or indigestion in infancy.

Among the many causes of this disorder is over-feeding. The stomach is taxed beyond its capacity. The innocent mother attempts to pour four ounces of milk into her baby, whose stomach cannot possibly hold but *two* ounces. The attending physician is too often responsible for this, and *his name* might be substituted for the words "over-feeding" in the etiological list. I never have seen indigestion produced by *under-feeding* (all other things being equal).

On the other hand, I have observed a large percentage of cases of indigestion where *over-feeding* was the sole cause, and many of these, I admit with regret, were among those I did not see in consultation.

The giving of improper food is an important factor in the etiology of indigestion. Undiluted cow's milk, with its firm, coarse, insoluble curd; some farinaceous article; any sort of a mixture that will run through the hole in the nipple of a nursing bottle and which the average infant, that cannot obtain the breast, usually gets in the early days of its existence, will produce indigestion. It is at this period the *harm* is done. The infant spends the remaining part of its career, if it does not die from some intercurrent disease (for which the above-named injury is responsible), in the hands of the doctor or proprietary food vender in search of relief. I have emphasized these causes for the reason that I believe they are more frequent than is generally supposed; also, because my attention is so often directed to older infants suffering from some chronic disease which had its origin in an acute form of gastric or intestinal indigestion. And I feel confident that these are causes which, in a great measure, can be prevented. I certainly would not fail to mention atmospheric heat, cold, dentition, sudden weaning, the too early giving of solid food, the feeding of unripe fruits (especially to older children), etc., etc. Each might be given an important place in etiology in individual and very obstinate cases of indigestion. Older children who fail to masticate their food and who swallow their meals hurriedly, bring upon themselves very severe attacks of indigestion. Oftentimes they stand upon street corners watching parades until their extremities are thoroughly chilled, and thus the "cold" here contracted produces indigestion, diarrhea, and even death. And so we might enumerate many other causes which are directly or indirectly responsible for indigestion in infancy and childhood. I have been much impressed with the large number of infants born with an *extremely feeble nervous organization*—infants naturally predisposed to disease, in whom indigestion produced convulsions, which, if not resultant in death, induced a permanent derangement of the nervous system. But the two causes which, in my humble judgment, produce more annoyance in early infancy and terminate ultimately in serious secondary gastric and intestinal disorders, are *over-feeding* and *improper feeding.*

I shall not consume any time in enumerating the symptoms, diagnosis, prognosis, etc., but enter at once into the discussion of a means of preventing indigestion as well as a plan for treatment where the disease is established. It is safe to state that we encounter very few cases of indigestion among babies fed at the breast. Assuming then that our patients are for the most part among artificially fed or bottle-fed infants, here is where we find a field for the prevention of a disease which is one of the most prolific sources of gastro-intestinal troubles of infancy or childhood—indigestion.

The first step in prophylaxis is to ascertain the weight of the infant and its gastric capacity. Instruct the mother or nurse on this point and one of the chief obstacles—*too mnch food*—will be overcome. The second step is the selection of a proper nourishment.

It is unnecessary at this time, after what has been accomplished by Rotch, Holt, and their many followers, to enter into detailed reasons why modified cow's milk is the best substitute for mother's milk, especially in the early months of infancy. Although a general rule may be adopted for the modification of milk, the details should be studied in its preparation to meet the requirements indicated by the physical condition and idiosyncracies in each individual case.

A third step, and one of no little importance, is an observance of the proper intervals of feeding. The nurse should be taught the average time required for the stomach to empty itself, and the second meal should not be given before the first is digested.

By an observance of the foregoing and careful attention to the cleaning of bottle, nipples, mouth, etc., much may be done to prevent a disturbance of the digestive organs. The best argument against the exclusive use of starchy foods in early infancy, is the total absence of such elements in the food furnished by nature. There is however, partial development at birth of the organs which take part in the digestion of starchy substances. Therefore, in the modification of milk, especially in individual cases, oat-meal water, or barley water, which contain a minimum proportion of starch, may be used. The above is recommended by Jacobi, who claims to have derived excellent results with no evil consequences.

As soon as digestion is arrested, the contents of the stomach act as a foreign body and an irritation is at once set up. The proteids, instead of being converted into peptones, remain in the form of albumoses, which have been shown by experiments on animals, to be toxic. The resulting congestion and catarrhal inflammation of the mucous membrane, and the rapid absorption of toxines is soon evidenced by the vomiting, high temperature, circulatory disturbances, diarrhea, with stools containing undigested matter, restlessness, prostration, and other striking symptoms which occur, especially in very young intants.

Washing out the stomach and cleaning out the alimentary tract to rid it of all irritating substances is the first step indicated in the treatment. The second indication is to insure absolute rest. All food, and especially milk, should be withheld until vomiting ceases. When vomiting subsides, albumen water, made by adding the white of one egg (with brandy and salt) to one pint of boiled water, may be cautiously administered. While drugs are usually of little value, I have observed good effects from the tincture of nux vomica and arsenite of copper. One-tenth of a drop of the former was given alternately every three hours with one-hundred-and-fiftieth of a grain of the latter. The patients were from two to six months of age.

The milk diet should not be resumed until the fourth day or until all symptoms of disease have disappeared. If the symptoms of the intestinal form of indigestion predominate, the stools should be carefully examined from day to day, and the milk withheld until they present a normal appearance. It is in the intestinal variety that we find recurrent attacks, and soon there are observed symptoms of an alarming nature, symptoms which indicate that structural changes have taken place and some new disease has supervened. An attempt should be made to avoid this by a strict attention to diet. The abdomen and extremities should be kept warm throughout the entire period of the disease. With older children no solid food should be allowed, and even milk during the hot months is contra-indicated until all symptoms have subsided. Barley-water, and the various broths (strained) may be given at regular intervals. In these cases the nux vomica and cuprum arsenite should be given. Later, when all symptoms have subsided, Pasteurized milk, to which formaline has been added in the proportion of one drop of a 40 per cent. solution to the pint, may be given.

In closing, I trust that in the presentation of the foregoing I may leave the impression that the paramount duty of the physician lies, first, in his efforts to prevent indigestion in infancy and childhood; second, in his awakening to the fact that many obstinate diseases result from indigestion, and that he may by a careful understanding of the normal and abnormal conditions, and by a strict adherence to the simple means of treatment, obviate many serious gastro-intestinal troubles which worry the practitioner and bring so much suffering to our little ones.

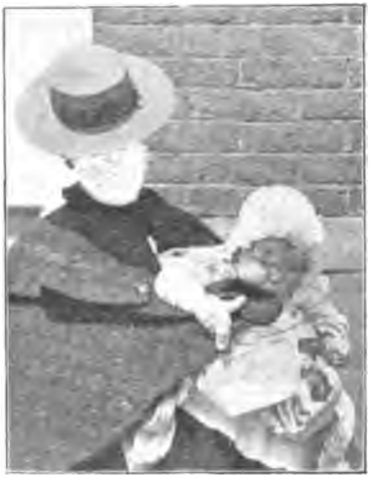
Cyanosis in Croup.—Many who have had but little experience in croup are too often misled as to the dangerous symptoms present by the absence of cyanosis, thinking cyanosis to be the cardinal indication for operative interference. They seem to forget that the exhaustion incidental to drawing sufficient air through the narrowed chink of the glottis by means of the powerful auxiliary muscles of respiration, is of itself a serious menace to the life of the patient, whose heart is already enfeebled by toxins. The recession of the supraclavicular and intercostal spaces and sub-sternal region are most important indications for immediate intubation. Perhaps the generally most satisfactory sign for interference when in doubt is, as pointed out by O'Dwyer, incomplete æration of the posterior portion of the lungs as evidenced by greatly diminished or absent vesicular breathing.

A CASE OF CONGENITAL MACRODACTYLISM.

By Fielding Lewis Taylor M.A., M.D.,
New York.

FRANCIS S., aged eight months, born of American parents. The mother has had four other children, two boys and two girls, all healthy and normal except a boy, who, she says, cannot walk or talk at the age of three. She did not bring the latter for examination, although frequently requested to do so.

Examination of the patient showed a healthy, fat, bright baby, well formed, except for the enormous enlargement of the index and middle fingers of the right hand and an excessive deposit of adipose tissue at their bases, particularly on the dorsal aspect. The mother stated that the deformity had existed since birth. The middle finger was as large as that of an adult male, its first phalanx being almost as long as the adjoining ring finger. The middle finger was quite useless, while the index finger could be almost fully flexed and extended. The only limitation to its function was at the last inter-phalangeal joint.



The index finger was not quite so large as the middle and not parallel with the other fingers, being apparently pushed

out of line by the hypertrophy of its neighbor. The other digits were normal in size, form, and function.

The skiagraph shows symmetrical enlargement of the phalanges of the second and third fingers.

As examination of the epiphyses of the affected fingers showed that they had not as yet joined the shafts, so that there was little chance of spontaneous arrest of growth, and as the middle finger was useless and interfered with the forefinger, I amputated the former at the metacarpo-phalangeal joint. I hoped in this way to bring the forefinger back into line and so improve the function and appearance of the hand. This anticipation has been already in a measure realized.

This condition is fully described in Annandale's "Malformation of the Fingers and Toes"; in E. Noble Smith's "Surgery of Deformities," and in Tillmann's Surgery.

Similar cases are quite frequent in the literature of the past sixty years.

173 West Seventy-third Street.

Whooping Cough.—

℞	Chemically pure bromoform	gtt. x
	Alcohol (90 per cent.), sufficient quantity to hold the bromoform in suspension.	
	Syrup of orange flowers	℥ i
	Simple syrup	℥ ii

This prescription may be given in the dose of one to five teaspoonfuls each twenty-four hours. To a child as young as six years a teaspoonful at seven in the morning, at midday, and at five at night is about the proper dose. It must be remembered that bromoform is a remedy of very great power, and that it must be used with some caution.—*Therapeutic Gazette.*

EDITORIAL COMMENTS

Night Terrors in Children

This subject is again attracting the attention of medical writers. Most of them agree that a distinction should be made between nightmare and night terrors. In nightmare the child awakes with a scream, is fretful, but perfectly conscious, states that he has had a bad dream, and often remembers all about it the next day. In pavor nocturnus the child sees visions in his sleep, is often found sitting up in bed, and pointing wildly at some imaginary object before him. He is unconscious of his surroundings, does not recognize those about him, is aroused with difficulty, and remembers nothing of his fright the next day. Night terrors occur between the ages of two and eight or ten years.

Some argue that nightmare is of reflex, and night terrors of cerebral origin. The reflex cause of nightmare may be a gastro-intestinal disturbance due to indigestion, worms and so forth. It may be partial asphyxia due to adenoids, nasal obstruction, heart disease, or distension of the stomach by gases. It may be some special sense disturbance, as errors of refraction, or disease of the ear.

Sufferers from night terrors, on the other hand, are usually of a highly neurotic temperament, easily affected by stories of nurses, new games, over-worry at school and the like. From the fact that many of the visions are red—Gowers has shown the visual area of epilepsy to be red—that the attacks are often followed by a copious discharge of pale urine, and that some of the cases develop epilepsy subsequently, we should certainly not make light of this condition. But, when we look at some of the youths of our acquaintance, who are now perfectly well, but who had most marked night terrors in childhood, we can only say that we regard this condition with apprehension rather than alarm.

In a recent paper (PEDIATRICS, Vol. viii., p. 357), Dr. Little thinks that the causes of the two conditions overlap, and would not draw so sharp a distinction between nightmare and night terrors. He regards dyspnœa, especially cardiac dyspnœa, as a very frequent cause of night terrors. In 17 out of 30 cases he found definite valvular disease of the heart; of the remainder, two had irregular action of the heart, five enlarged tonsils and adenoids, and two chronic nasal obstruction. He says: "The dyspnœa which precedes night terrors is always moderate. The discomfort initially feebly realized, becomes massive by its prolongation, and is translated in the child's peculiarly fantastic turmoil of sub-consciousness into the mental content of terror associated with an external cause." T.

Uretero-Intestinal Anastomosis in Exstrophy of the Bladder

Within the past few months several successful cases of uretero-intestinal anastomosis have been reported. This operation originated with Simon in 1852, but was subsequently abandoned, chiefly, it is said, on account of ascending infection of the kidney. In reporting a successful operation of this nature in *Revue Mensuelle des Maladies de l'Enfance*, Nové-Josserand considers that the danger of pyelo-nephritis has been greatly decreased since Maydi, in 1894, proposed fixing the trigonum vesicæ in the intestine, thus preserving the normal ureteral openings with their sphincters. Of eighteen cases of this operation, collected by the author, three died—one from shock, one from infection, and the third from pyelonephritis, four months after the operation. Several cases that were followed from six to fifteen months had developed no disease of the kidney, and continence was perfect in all but two. The patients could retain their urine, on an average, from three to four hours; some as long as six or seven hours. There was no rectal tenesmus, colic, nor diarrhea in any of the cases. While the prognosis as to life is not so good in this as in the usual plastic operation, the benefit derived is much greater. The incontinence resulting from the absence of a vesical sphincter cannot be remedied by the usual plastic methods. T.

Carbolic Acid in Tetanus

Tetanus antitoxin seems to be of service in chronic tetanus, but we cannot say that we have not been disappointed in the results obtained from its use in acute cases, whether it was administered hypodermatically or injected into the cranial cavity. It may be that the doses used have been much too small, and that the remedy has not been pushed with sufficient vigor in the beginning of the disease. In the recent epidemic in this city, few if any acute cases recovered which were treated with antitoxin. Hence, we read with great interest in the *New York Medical Journal* (Sept., 1899) of a case of acute tetanus, treated successfully by Dr. F. H. Woods, with carbolic acid. His patient showed rigidity of the neck, chest, abdomen and extremities, the jaws were tightly locked, the least noise would precipitate a paroxysm, perspiration was profuse, the face expressive of extreme agony, respiration was seriously affected, deglutition was impossible, dyspnœa and opisthotonos came with the first spasm, and lasted until the system relaxed some days later. The temperature was never above 102° F., the pulse was 86.

After opening and cleansing the wound, ten minims of a ten per cent. solution of carbolic acid were administered hypodermatically; fifteen minutes after the first, twenty minims were used; fifteen minutes after the second, thirty minims were used. Thirty minims were continued throughout the day, every half hour, with half a grain of cannabis indica. Later a drachm was administered only when the patient was restless. From the afternoon of the third day marked improvement was manifest. The carbolic acid caused the characteristic smoky color of the urine on the second day.

Recovery was complete, and no symptoms of renal irritation persisted. The color of the urine in these cases is due to pyrocatechin and hydroquinone, substances derived from the carbolic acid. This color seems to bear no definite relation to the quantity of carbolic in the blood, nor to the danger of poisoning, according to Brunton. Disappearance of the sulphates from the urine is a sure indication of danger. Their presence can be ascertained by acidulating the urine with acetic acid, and then adding barium chlorid in excess, when we get a copious white insoluble precipitate of barium sulphate.

Carbolic acid pushed cautiously may prove a valuable adjuvant to tetanus anti-toxin, until the latter has been rendered more efficient by further experimentation and study.

T.

Urticaria.—Mr. Skinner, pharmacist to the Great Northern Hospital, recommends the following formula for allaying the itching burning sensation of urticaria:

℞	Liquoris hamamelidis	℥ ii
	Salis maris	℥ ss
	Aquæ destillatæ	O i

To be applied freely.

He also speaks highly of the following cold cream:

℞	Adipis benzoinat	℥ iv
	Ceræ albæ	℥ ss
	Cetacei	ʒ i
	Boracis	ʒ ss
	Glycerini	ʒ i
	Aquæ coloniensis	℥ iiss

—*Therapeutic Gazette.*

SOCIETY REPORTS

PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting, Tuesday, October 10, 1899.

The President, Dr. E. E. GRAHAM, in the Chair.

Exhibition of a case of **Scurvy and Rickets.** By Dr. F. A. PACKARD.

DISCUSSION.

Dr. GRIFFITH.—We all recognize the close association between the two diseases, scurvy and rickets. In fact, some writers deny altogether that infantile scurvy is other than a complication of rickets. The two so commonly occur together that this seems at first a justifiable opinion. But a study of cases collectively proves distinctly that scurvy may occur without rickets. I believe them to be entirely distinct diseases, although alike.

Dr. McKEE exhibited a case of scurvy.

Dr. F. A. PACKARD exhibited a fluid withdrawn by lumbar puncture from a case of meningitis, probably traumatic.

The fluid shown was withdrawn this afternoon from a case of supposed traumatic meningitis. It looked perfectly clear and limpid as it dropped from the canula, but by transmitted light there are seen slight turbidity, and numerous small specks scattered through it. Most of this fluid has been through a centrifuge, so that it does not show by any means as many of these specks as at first. I think this has great significance in diagnosis. At first sight the fluid would be described as clear, yet such is not the condition. My object was only to show the fluid itself in the gross appearance, as I hope at a future meeting to make a more detailed report of the bacteriological and chemical findings, as well as to speak of the case. There was an ounce of fluid drawn by lumbar puncture.

Dr. ALFRED HAND.—I can bear out what Dr. Packard says as to the fluid not showing the flakes in the bottle as well as in the test tube. In the specimen sent me for examination, the flakes look like minute pieces of lymph.

Last Summer I obtained a similar fluid in a case of meningitis, which finally turned out to be tuberculous. There was a distinct history of trauma the day before the onset of the meningitis. The quantity of fluid obtained was one teaspoonful, and it contained a little blood, probably from injury of a superficial blood vessel. No tubercle bacilli were found in it.

Dr. PETER exhibited a case of **Bell's Palsy, Accompanied by Herpes Zoster.**—The boy is ten years old. Three weeks ago he complained of a pain in and about the right ear, and right side of face. Three days later, there appeared an herpetic eruption along the branches of the facial nerve, back of the ear, over the cheek, and especially marked along the lower part of the face. At the same time, the right side of the face was puffy and drooped, the mouth was drawn to the left and he could not close the right eye.

The eruption has almost disappeared, but the right side of the face is expressionless, the mouth even at rest is drawn toward the left, and he can neither close the right eye nor corrugate the frontalis muscle over the eye. There is evidence of disease of the middle ear, and it probably is from the ear disease that the inflammation of the nerve originated.

The feature of interest in the case was the presence of herpes zoster along the branches of an inflamed motor nerve. The eruption is frequently seen in the intercostal and tri-facial neuralgias, and inflammations of other sensory and mixed nerves, but its occurrence along the fibres of a motor nerve has rarely been noted. In a hasty glance through works by Gowers, Sachs and others, I found reference to but one case, and that was thought to be a coincidence. Recently, however, several cases have been reported in literature.

Inferences which may be drawn from a case, are: 1st, it probably indicates a rather severe grade of inflammation in the nerve, because herpes zoster is trophic in origin; and 2nd, we may infer that possibly the seventh nerve may contain within its sheath sensory fibres.

Dr. PEARCE.—Herpes zoster accompanying inflammation of a motor nerve does not frequently occur, though I am not prepared to say why it should not, if trophic function is so disturbed. An interesting case of tic douloureux was reported by Dr. John K. Mitchell, in which the second division of the fifth nerve had been entirely removed, and yet sensation was preserved in the distribution to the face immediately after operation. Dr. Mitchell's surmises were that sensation remaining in such a case as he recorded, possibly proved that there were sensory fibres in the seventh nerve. Conversely it is probable that this case presented to-night may in a measure also bear out this observation; and perhaps some sensory fibres may exist in the seventh nerve.

Dr. ESHNER.—In further support of what both the gentlemen have said, it may be stated that subjective numbness and occasionally actual objective impairment of sensibility are sometimes observed in cases of facial palsy. This may be susceptible of the same explanation as Dr. Peter has given, namely, simultaneous involvement of both the fifth and the seventh nerves, but in view of the statement of Dr. McKee, it seems not improbable that certain fibres accompanying the seventh motor nerve may possess sensory functions.

Dr. EDSALL.—I was much interested in seeing a paper on this subject of herpes with facial paralysis by Eichhorst, in which he described cases under his care, the only ones of the kind he had ever seen. The literature would indicate that it is of rare occurrence, but I have always had a strong suspicion that the people who had the cases did not report them. During the last two years in my own small experience I have seen two such cases. Also in speaking with one or two of my friends I have found this to be their experience. I judge it is much more common than the reports would indicate.

Dr. SCHAMBERG.—The pathology of herpes zoster is pretty well known. The lesion is always a neuritis or a ganglionitis. In the case of the trifacial nerve the ganglion involved is the Gasserian ganglion. The trifacial nerve is involved almost exclusively of the cranial nerves. The case under consideration appears to me to be of considerable interest. Herpes zoster associated with facial palsy is uncommon, although a series of such cases has recently been reported in France. I think the sensory fibres have little to do with the condition. It is a question of involvement of the trophic fibres in the nerve trunk. The trophic lesions in herpes zoster vary from a simple erythema which precedes vesiculation to gangrene in some cases. Localized gangrene accompanying herpes zoster is not a rarity. The term herpes zoster applies to all vesicular diseases occurring from nerve inflammation, whether involving the nerves of the trunk or the cranial nerves. We not infrequently observe anesthesia in herpes zoster of the supraorbital region. The occurrence of paralysis with herpes zoster is not as common as anesthesia.

Dr. J. F. SCHAMBERG reported a **Clinical Study of the Lymphatic Glands in 100 Cases of Scarlet Fever.**

DISCUSSION.

Dr. WELCH.—I have listened with much pleasure to this paper of Dr. Schamberg's, as I knew he was engaged in the study of the lymphatic glands in scarlet fever, and was anxious to learn the result. I had hoped that something more practical would come out of the study. If, as the result of his investigation, Dr. Schamberg was able to tell us how we could feel sure of the diagnosis in doubtful cases of scarlet fever a great point would be gained, especially with us at the hospital where we are so frequently called upon to remove scarlatiniform rash cases from the diphtheria wards. If certain glands were found to be invariably enlarged in scarlet fever, mild or severe, the diagnosis would be greatly simplified. I regard, however, Dr. Schamberg's paper as a valuable contribution to the literature of the subject.

Dr. D. J. MILTON MILLER.—I remember reading an article in *Nothnagel's Therapie*, in which the statement was made that there is more constant enlargement of the inguinal glands in scarlet fever than of the cervical glands. This, I think, is corroborated by Dr. Schamberg, who found, I believe, 100 per cent. involvement of the inguinal glands. The author believed such enlargement to be of some diagnostic value. The statement was also made that Gerhardt says that scarlet fever is, after all, a misnomer; that what we call scarlet fever represents a group of diseases. As to the eruptions in diphtheria, it has been my limited experience that the eruptions accompanying diphtheria almost invariably occur in cases in which the streptococcus is present, where we have a mixed infection. I saw this summer a case which brought this fact to my mind forcibly. A child had scarlet fever when two years old very severely. At the age of eight it was taken suddenly sick with sore throat. There was vomiting and a temperature of 102½°. Within thirty-six hours there was an eruption. The child was brought a distance of 160 miles, and I saw it at the end of the third day. An eruption was present which in every respect resembled that of scarlet fever, and which faded in four days. At the end of the first week the child had swelling of the wrist joints; a week later it had suppurative otitis that afterwards extended to the mastoid. The child did not desquamate, except slightly about the finger tips. The question arose whether this was a second attack of scarlet fever. The child was not isolated, and no one acquired the disease from it. It is my belief that this eruption and the eruptions that accompany diphtheria and severe tonsillitis are due to the presence of the streptococcus; in other words that they are septic eruptions.

Dr. GRIFFITH.—I suppose that one of the earliest writers upon rubella made an observation that in this disease the glands in the region behind the ear and in the neck were enlarged. Probably every man after that looked for enlargement of those glands in this affection and found it. As a result this was noted in the text-books as a diagnostic sign. If, on the other hand, it was a case of measles, the physician did not look for enlargement of the glands, and consequently did not find it. It occurred to me some years ago, seeing some rather doubtful cases of measles, that I would look for the enlarged glands in this disease also. I may state that I have found enlargement of the superficial cervical glands about as frequently in this disease as in German measles. Yet very little was said about it in the text-books, and I am convinced that this is because the enlargement has not been sought for. It occurs to me that the same may be true of scarlet fever. I confess that I have not sought for the general enlargement in this disease, and this is probably the experience of most of us.

I believe that it is a question whether we do not have in all these infections a tendency to enlargement of the lymphatic glands. Probably it is owing to some effort of nature to remove the poison from the blood. We now know that we have at least four infectious diseases in which there are enlargements of the lymphatic glands, viz., diphtheria, rubeola, rubella and scarlatina, as Dr. Schamberg has shown. Is it not perhaps a characteristic of infectious diseases rather than of any one infectious disease occurring in childhood? I think, too, that children show a decided tendency to enlargement of lymphatic glands. This is probably generally admitted. I have made a series of examinations of apparently healthy children, and although they did not have enlargement of the glands to such a degree as infectious diseases show, yet there was distinctly a tendency to glandular involvement throughout the body in the average child.

Dr. T. S. Westcott.—I think Dr. Schamberg is to be congratulated for so forcibly calling attention to the general enlargement of lymphatic glands that may be observed in scarlet fever. We have been so accustomed to look for enlargement of glands in various portions of the body in German measles, especially in the post-cervical chains, in the axillae, and in the groins, that we may too readily assume the presence of the milder disease when, with an anomalous rash there is a decided involvement of the glands in these positions. Amarked instance of this came under my observation last spring in a child 5 years old. The rash was decidedly atypical, not generalized, largely discrete in character resembling closely that of rötheln, and in only one place—over the pubes and about the genitalia—did it assume a distinctly erythematous appearance. The enlargement of the post-cervical, axillary, and inguinal glands still further added to the picture of rötheln. The attack was quite mild, but on the sixth or seventh day lamellar desquamation took place over the site of the rash about the genitals, and later slight shedding about the finger nails was noted. Seventeen days later a sister of this child passed through a typical attack of scarlet fever.

In such a case as this, which certainly looked at first like a mild rötheln, Dr. Schamberg's careful observations would lead one not to attribute too much importance to general glandular enlargements, as weighing against a diagnosis of scarlatina.

Dr. Alfred Hand.—I made one visit to Dr. Westcott's patient, while the rash was visible, and found it to be most puzzling, because of the poor development of the rash, and the absence of constitutional symptoms. It was, however, a suspicious case, and I was of the opinion that if desquamation occurred, it would be right to call the disease scarlet fever. From Dr. Westcott's description of the desquamation I was of the impression that he considered it rötheln, so when, fifteen days later, I was called in his absence to see a younger sister of the first patient, and found her with a similar rash, measles-like in some areas, scarlotiniform in others, with no constitutional disturbance, but with a strawberry tongue, I waited a few days before calling it scarlet fever until a typical desquamation set in; the glands in both of these cases were enlarged, especially in the inguinal in the first patient and the cervical in the second. These cases illustrate the difficulty in diagnosis that sometimes arises, and I regret that Dr. Schamberg's studies have not had a more positive result.

Dr. Schamberg.—I would state that the glands were examined at all stages of the disease, that they diminished in size perceptibly after the first week, and at the end of three weeks some of them had almost disappeared, though they were still palpable. The results of examination for glandular enlargement do not, I think, warrant the belief that it has any great diagnostic value except within the limitations mentioned. The facts are presented as a slight contribution to the symptomalogy of the disease. The differential points ordinarily given between scarlatiniform erythema and scarlet fever, I do not think are of reliable character. The data of greatest value are the history of the case and the evidence of contagion. Frequently one can get a history of previous attacks in scarlatiniform erythema. There is often too much diagnostic stress laid upon the mere existence of desquamation. The rash of scarlet fever is a dermatitis in the same category, and produced in the same manner as the dermatitis produced by the ingestion of quinine. It varies from the slightest sort of erythema to an intense rash accompanied by vesiculation. The greater the amount of vesiculation, the greater will be the desquamation.

More important than the existence of desquamation is its persistence, the fact that it will frequently continue for six, or seven, or eight weeks. Desquamation occurs in many other forms of eruptive diseases. It is often present in scarlet fever, as a branny scaling, but in severe cases may extend to the exfoliation of large areas of cuticle. The mere existence of desquamation does not decide the question; its character and persistence are of more importance.

Dr. A. Marcy, Jr., read a paper entitled, **Auto-Intoxication as a Cause of Cyclic Vomiting in Young Children.**

Dr. Griffith.—I am particularly interested in this subject, having seen two of these cases of Dr. Marcy and two others, one of which was as severe as a case can be not to die. There is little that can be added. As Dr. Marcy has said, we do not know what it is. Leyden wrote some years ago of what he called periodical vomiting. All his cases occurred in adults and nearly all were characterized by a great deal of abdominal pain. The disease seemed undoubtedly a pure gastric neurosis. In the case reported by Dr. Marcy the pain was a minor matter and did not develop until the child had been vomiting quite a long while. I am in doubt whether such cases can be put into the same category with Leyden's. There seems to be a curious inability to trace these attacks to any uniform indiscretion of diet or fault of hygiene. It looks to me as if there was the gradual storing up in the system of some poisonous substance and that after awhile we have an outbreak of this. But that is only supposition and the disease may be a pure neurosis. I remember having had a talk with Dr. Pepper about one of these cases of Dr. Marcy's. The treatment to prevent further attacks was as uncertain in his mind as in mine. Not knowing what could be the cause, it seemed impossible to formulate the proper therapeutic measures. Sometimes the use of morphia hypodermically seems to be the only course that will do good. In one of the cases I have seen, all measures had been unavailing, until in desperation the attending physician adopted my advice to narcotize the child in this manner. The good results were immediate and surprising. A fact which I believe important is that the opening of the bowels is not what cures the disease. The attack being over, the vomiting ceases and the bowels open also. Thus relief of the obstinate constipation seems to be a result, and not a cause.

Dr. Marcy closes.—In my paper I have not gone into the treatment of this disease, but I have covered the ground pretty well in the management of cases. Up to the present time I have absolutely found all plans of treatment useless, except hypodermic injections of morphia, atropia and strychnia. I believe the line of treatment along which we will get the best results is the intravenous injection of normal saline solution. Although I believe at the time the vomiting comes on that the poison has been absorbed in the blood and that washing out of the gastro-intestinal tract will not particularly benefit the patient, yet it is possible that if that is the source of the poison there may still be some of it unabsorbed, and we will thus get rid of it. Normal salines by intravenous injection will undoubtedly give some results and it will be the line along which I shall pursue treatment in the future. As Dr. Griffith has said about opening the bowels, it is a fact that although they may be opened in the beginning of the attack there comes a time during the attack in which peristalsis is suspended. Peristalsis does not begin and the bowel movements do not occur until after the attack is over. The child ceases to vomit and goes into deep sleep lasting sometimes many hours. After that time there will come perhaps in two or three hours copious bowel movements and a very free flow of urine. This condition comes distinctly when the attack is over.

PRACTICAL NOTES

Treatment of Parotitis.—Avoid exposure, which, in the case of boys, may favor metastasis to the testes. Mild cathartics. Liquid diet.

℞ Tinct. belladonnæ.
Tinct. aconiti
Tinct. opii, āā .... ʒ iv

M Sig. Apply several times daily over the swelling with the finger tips or a camel's hair pencil.

Or

℞ Ichthyol
Plumbi iodidi, āā........................gr. xlv
Ammonii chloridi........................gr. xxx
Adipis..................................℥ i

M Sig. Apply three times daily, and cover with a cotton-wool dressing.—*Jour. Am. Med. Association.*

Bromoform in the Treatment of Whooping Cough.—

℞ Bromoform
Tincture of aconite
Tincture of drosera
Alcohol
Glycerin................................āā

M To be given in daily amounts of from ten to twenty drops, according to the age of the child.—*Progrès Médical*, 1899.

The True Value of Gargling.—By gargling in the usual way only the upper anterior surface of the uvula and soft palate and base of the tongue are reached. The method of holding the nose and throwing the head well back when gargling enables the fluid to reach every surface of the pharynx.

The value of the two methods can readily be tested by painting the posterior wall of the pharynx with a strong solution of methylene blue. After gargling with water in the usual way, the latter will be perfectly clear and unstained;

then let the patient gargle again by the method suggested, and the ejected fluid will be found stained.—*Editorial, Charlotte Medical Journal.*

Enuresis.—Dr. M. G. PRICE (*Louisville Jour. Surg. and Med.*), claims to have had much success with this rebellious trouble, and gives below one of the remedies used by him.

℞	Tinct. Belladon........................	gtt. v
	Ext. Ergot. Fluid.................	gtt. x
	Tinct. Nucis Vom......................	gtt. v
M	Sig.: Repeat four times a day.	

Boric Acid Sugar for Thrush.—ESCHERICH states that the promptest and most effective method of curing thrush and cleansing the mouth is to put a little boric acid and saccharin on a sterilized rag and give it to the infant to suck.—*Journal Am. Med. Association.*

ABSTRACTS

FIBRINOUS RHINITIS.

Wishart (*Laryngoscope*, 1899, vii, 151) reports the following cases of Fibrinous Rhinitis:

Case I.—Occurred in the writer's family. On July 17, 1898, M. W., aged six years, complained of stuffiness of the left nostril in the evening. but was quite well, and slept soundly, and was not examined till the day following. The left nasal chamber was then found completely filled from front to back with a grayish-whitish fibrinous semi-transparent membrane. It was removed entire by injecting cocaine beneath it and by the use of a probe. The membrane was attached to the septum anteriorly and to the inferior, and perhaps to the middle turbinated bones as far back as the posterior nares, and when removed left a slightly bleeding surface. The throat showed no signs of membrane, except two faint white lines behind the right posterior faucial pillar. The pulse was 76, and the temperature normal. After the removal of the membrane, finely powdered iodoform was dusted on to the surface. The membrane was examined the same day by Professor Anderson, who found numerous polynuclear leucocytes with fibrin, but no bacteria. Cultures were also made, which showed abundance of staphylococcus albus, but nothing else. The membrane did not reform to any appreciable extent, and did not invade other parts. Iodoform was blown in daily, the child was not isolated, and was not ill in any way, and the nose was healed in about a week.

M. E. W., aged five years, sister of No. 1, was examined accidentally on the evening of the 29th of July, 1898, twelve days following the above, and a membrane was observed on the posterior wall of the pharynx, which was examined also by Professor Anderson. Culture proved this to contain Klebs-Löffler bacilli. She was isolated and antitoxin promptly administered. The glands were slightly enlarged, and there was a slight extension of the membrane. Recovery ensued within a week. No paralysis followed, but the anemia was very marked. The nose was not involved. Neither of these children were exposed to contagion in any known way, and no other members of the family were affected.

Case II.—August 25, 1898, H. W., aged nine years, was brought to the office by her mother, who stated that she was not sick, but that she complained of some stuffiness of the nose, which she thought might be a return of adenoids, for which an operation had been performed in May. On inquiry it was found that she had had a sore throat about ten days earlier, which had been pronounced by a physician non-diphtheritic, and from which she had recovered. The one side of the nose was found completely blocked with a membrane similar to that described in No. 1. Removal left a bleeding surface. The child was promptly referred to the

Isolation Hospital, and the Klebs-Löffler bacilli were found. The membrane spread out to the pharynx. Recovery ensued, but over six weeks passed before the bacilli disappeared.

Case III.—M., an infant a few days old, was found to have difficulty in nursing, as its nose seemed to be blocked. On examination the author found one side of the nose filled with a fibrinous membrane. The membrane was examined at the health office, and the Klebs-Löffler bacillus found. There was an extension of the membrane, and no other symptoms of diphtheria were observed.

Case IV.—H. R., boy aged five, in the practice of Dr. Fotheringham, developed a choked nose in November, 1898. The nasal passage was completely occluded by a whitish membrane. The Klebs-Löffler bacillus was found in abundance. The membrane remained present for fourteen days, and the bacillus was found on each of the several examinations.

There was no clinical evidence of diphtheria at any time, and there was no extension of the membrane. The remaining residents of the house—father, mother and maid—each developed typical pharyngeal diphtheria, with all the clinical symptoms, the maid's case being of a severe type, with faucial paralysis, and a peripheral neuritis of the anterior tibials following.

The following cases occurred in the author's hospital practice:

Case V.—F. J., aged nine, was operated upon in September, 1898, for deflected septum. On the fourth day thereafter one nostril was occluded by a fibrinous membrane. Bacteriological examination showed the presence of staphylococci and the Klebs-Löffler bacillus. The child was isolated for nine days, and there was no extension of the membrane, and no delay in the healing of the wound.

Case VI.—W. R. C., aged four, was admitted in February, 1898, for anemia and epistaxis. The child proved to be hemophilic. Some months after admission both nostrils were found to contain a fibrinous membrane, which, on removal, left a bleeding surface. This membrane recurred persistently, and its presence was attended by attacks of epistaxis. Repeated bacteriological examinations were made, but no Klebs-Löffler bacilli were ever found. The child was not isolated, the membrane was removed, and various powders, styptic and anti-septic, were applied. The membrane finally disappeared, and the child was discharged in the following September.

Case VII.—H. P., boy aged ten, entered the Hospital for Bell's paralysis, on December 30, 1898. On the 27th of January his nose was observed to be sore and bleeding, and high up in the right chamber a whitish membrane was discovered. This was found to contain staphylococci only; no other symptoms were observed, and the patient was discharged on the 9th of February.

As will be seen, these seven cases give examples of benign membrane in two cases, and a membrane containing Klebs-Löffler bacilli in five cases. Again in two cases, one of them with a benign membrane, there is a clear history of the infection of those brought into contact with the patient. The appearance of the membrane varied, being grayish and viscid in No. 1, and white and somewhat friable in No. 6. In no case could the membrane be removed without leaving some slight bleeding point, and in no case except in No. 6 was the bleeding very marked.

It would appear that observers of this interesting disease fall readily into three classes:

1. Those who consider diphtheria and fibrinous rhinitis to be distinct diseases.
2. Those who consider that there is but one disease, but that the degree of contagiousness varies, so that we may safely neglect to isolate such cases, where no clinical and bacteriological evidences of diphtheria are to be found.
3. Those who would isolate every case.

In view of the fact that cases possessing a membrane bacteriologically innocent, have apparently communicated diphtheria to others, are we not warranted in thinking that the Klebs-Löffler bacilli were really present somewhere? If so, we are forbidden thereby to abandon the isolation of these cases until a series of bacteriological examinations have been made, which practically means until the disease itself has disappeared.

In conclusion, we may fairly consider that the accumulated evidence proves the following points:

1. Fibrinous rhinitis and diphtheria are not distinct diseases.
2. All cases of fibrinous rhinitis need the same precautions as to isolation that diphtheria requires.

SOME OBSERVATIONS UPON THE DIAGNOSIS AND TREATMENT OF TUBERCULOUS DISEASE OF THE MIDDLE EAR AND ADJOINING MASTOID CELLS.

W. MILLIGAN, Manchester (*Laryngoscope*, 1899, vii. 175), says: The characteristic features of tubercular middle ear disease might be somewhat masked on account of accompanying pathogenic infection, and an accurate diagnosis might be impossible if one relied upon finding the bacillus of tubercle in the secretions from the middle ear. Amongst causes which might be considered predisposing are the following: (1) Hereditary tendency, (2) unhealthy environment, (3) unsuitable feeding, (4) exposure to infection from tuberculous relatives, (5) the presence of the nasopharyngeal adenoids. The relation of nasal obstruction to tubercular middle ear disease deserves special consideration. In many cases postnasal adenoids were present, and in a small proportion had themselves been tuberculous. The almost constant degree of Eustachian catarrh, which their presence implies, produces a soil which is favorable to the growth of the tubercle bacillus, and once it finds a footing in the middle ear, the conditions favorable to its development are present, a suitable soil, a more or less uniform temperature, etc. In the early stages these tubercular foci appear as slightly elevated, yellowish points in the mucosa, after a time coalescing and breaking down to form superficial tubercular, ulcers. Should the deposit occur on the inner aspect of the membrane perforation ensues. Such perforations might be multiple, and the destruction of tissue is usually quite painless. The edges have a pale, indolent-looking appearance, and the accompanying discharge from the middle ear is usually thin, ichorous and frequently fetid. Within mastoid cells, such deposits are also frequent, and in some cases it may be determined that the disease begins first of all within the mastoid and subsequently spreads to the middle ear. At a very early stage the bone becomes affected and undergoes an amount of destruction almost inconceivable, considering the comparatively slight external indications present. In some cases practically the entire cancellous tissue of the mastoid—occasionally of both mastoids—had been eaten away, leaving merely a bony shell, upon which the middle fossa was poised. Owing to this early and extensive destruction of bone, the facial nerve in part of its course was exposed with resulting facial paralysis. In fact, early facial paralysis in a case in which sthenic symptoms were absent, should be looked upon with suspicion, and as an even probable manifestation of an underlying tubercular lesion. Early implication and enlargement of the glandular structures around the ear is also a most important symptom, and when masses of enlarged glands occur around the ear any discharge from the tympanic cavity should be microscopically examined for bacilli. To definitely establish the fact that the aural lesion is of a tuberculous nature, the characteristic bacillus must be found. The method which gives the most reliable results is the inoculation of guinea-pigs with small fragments of tissue removed from the middle ear, or adjoining mastoid cells, and it is advisable to inoculate with fragments of bone and mucous membrane from an area where the disease was seen to be advancing.

The practical difficulties encountered in removing tubercular deposits within bone are immense, and in no region of the body are those difficulties greater than when tuberculosis attacks the temporal bone. The complications to be feared are: (1) meningitis, (2) tubercular enteritis, (3) general marasmus. The treatment of such cases must be considered from two points of view, according as it is non-operative or operative.

The first and main essential is to provide free drainage. This implies opening and cleansing the mastoid cells, and it is a remarkable fact how often in such cases, without any external and objective sign or indication, the mastoid cortex will be found extensively perforated, and a pultaceous mass immediately exposed to view. All softened and carious bone must be scraped away, and as smooth a cavity left as possible, even if this necessitates laying bare the dura and walls of the lateral sinus. The cavity should be allowed to granulate from the bottom, and care should be taken to stimulate any sluggish area by the application of chloride of zinc, nitrate of silver, etc. Frequently more than one scraping is necessary.

An important point arises in connection with the treatment of the accompanying enlarged glands. Some of the glands might be enlarged purely as the result of septic absorption, and if the morbid cause be removed this enlargement would subside, especially if aided by suitable treatment. But many of the glands are of a tubercular nature, and are prone to undergo caseous degeneration; while at the same time they are a source of possible systemic infection. Hence after the mastoid area and cavity of the middle ear have been attended to, and as soon as condition of the patient permits, another operation should be undertaken with the object of removing the enlarged and tuberculous structures. General treatment, such as the administration of cod liver oil, iodide of iron, syrup of iodine, etc., is useful, as is also a change of air and liberal diet.

NASO-PHARYNGEAL ADENOIDS AS A CAUSATIVE FACTOR IN EAR DISEASES.

A. T. Haight, Chicago (*Laryngoscope*, vii, 179), said that among the most interesting cases that came before the otologist were those pertaining to post-nasal vegetation, affecting the hearing, and there were few patients to whom more satisfaction could be rendered than to those so affected. Adenoid vegetation seemed not to be restricted to countries, to climates, to sex, to color, or race of man. Adenoid vegetation might produce inflammation of the middle ear, (1) by constant irritation on account of the obstruction to the circulation of the blood by pressure, (2) by blocking the orifice of the Eustachian tube partially or completely, (3) by their injurious effect upon the general economy of the child and particularly upon the nerves of special sense, (4) by leaving as a sequela post-nasal catarrh, which sooner or later establishes some form of middle ear disease. In children who have suffered from adenoid vegetation the hearing is generally very sensibly impaired. In many cases the Eustachian tube is completely blocked by dry secretions of the post-nares. Diminution of power of hearing on the side where the adenoid existed is frequently observed. On the opposite side, where the post-nasal space is clear, the hearing is normal. He had seen cases where the hearing was seriously impaired and the drum membranes normal in appearance, and yet with safety he assumed the faulty hearing to be dependent upon the growths in the naso-pharynx. Mouth-breathing had an important otological bearing on the subject. The mouth-breathing child was usually found shallow through the upper part of the chest, and with very small lung capacity. We frequently met with children affected with adenoids, who were not mouth-breathers, and these children were plump, well developed, and of healthy appearance, although they usually had some ear complication. Examination of twenty-six children for deaf-mutism revealed only four free from post-nasal adenoids; sixteen of those examined showed marked facial deformity from mouth-breathing. He coincided with Harrison Allen and Sisson, who had the opinion that there were many children in homes for feeble-minded and idiots all over the world who were affected by this disease, and who by a comparatively trifling operation could possibly be restored to usefulness and their families.

If the symptoms of these growths were more generally understood by the family physician, and their removal accomplished, they would not find so many chronic suppurative and non-suppurative inflammations of the middle ear, with the history dating back to an attack of diphtheria, scarlet fever, measles or other fevers. As to treatment, it was never too early, nor was it ever too late. Curetting was the only true basis of treatment.

THE FUTURE OF APPENDICITIS CASES.

Dr. E. J. Cottier (*Revue Mensuelle des Maladies de l'Enfance*), examines the ultimate result in 86 appendicitis cases treated by Broca, ranging in age from a few months to fifteen years. All the patients were seen again at from six months to five years after they left the hospital.

In this inquiry he divides them into three classes: 1. Patients not operated on. 2. Patients operated on during an acute attack. 3. Patients operated on in the afebrile period. Among the patients not operated on he has noted the relapses, and the number who subsequently underwent operation. Of those operated on, he has endeavored to ascertain the number who had new crises, persistence of fistula and hernia, the most frequent complications.

Some of these cases underwent operation for radical cure of hernia, while three sooner or later suffered from intestinal strangulation due to adhesions, or peritoneal bands.

Cottier's aim is to show by analysis of Broca's statistics that the latter is justified in taking a position against immediate operation in every case, and against searching for an appendix which is at the bottom of a purulent cavity. Of these 86 cases: 1. 19 went out without operatien; of these 19, 5 returned after a fresh attack, and were operated on in the afebrile period; 13 had no pain after the operation, and remained well; one had slight colicky pains.

2. Forty-seven were operated on during an acute attack, one for general peritonitis. The appendix was removed from only three. Of these 47, 28 had no trouble afterwards, and remained in perfect health. Four went out with a fistula, and were subsequently operated on, and remained in perfect health.

3. Thirty were operated on during an interval. (Eight of them had been operated on previously, during an acute attack). At the time of writing, all 30 were in perfect health. Three showed slight separation of the muscular walls, and a slight impulse on coughing.

4. Finally: three died of intestinal obstruction, due to peritoneal bands at intervals of eight months, one month, and seven months after operation. One of these was not operated on in the first place by Broca. Two were suppurative cases, showing how adhesions were the cause of the accidents. One of these was an operation in the acute stage for abscess. One was operated on in the afebrile period, but in this the extent of the suppuration necessitated drainage, and a temporary fecal fistula occurred.

CAVITY AT THE APEX OF THE LUNG IN AN INFANT.

M. Susset (*Société Centrale de Médicine du Nord*, May 12, 1899), presented a case of cavity at the apex of the right lung in a child of eleven months. The infant had died of generalized tuberculosis. The cavity was as large as a hen's egg, and presented nearly all the characters of a sub-pleural cavity in the adult. Vascular bands were found to be more numerous, explaining the peculiar form of the cavity, and the greater tendency in infants to sudden and alarming hemorrhage. Clinically, there were all the signs of tubercular infiltration. M. Susset emphasized the rarity of the condition in so young a patient. In a large number of autopsies upon babies, he had never seen but three caverna, and these were in children of much greater age.

TREATMENT OF ACUTE DIGESTIVE DISORDERS OF INFANCY.

A. R. Gordon (*Canadian Practitioner and Review*, 1899, xxiv, 579) says we should begin our treatment with the suspension of all the regular articles of diet and the employment of substitutes, and if the attack is in the stomach, the reason for this is all the more pronounced. Withholding of food must be absolute, from eight to ten, or twelve, or even twenty-four hours, with the administration of water alone. In the simpler forms suppression of food may be all that is necessary for a few hours. After this, rice water, etc., may be used. Liquid peptonoids he has found very satisfactory. It may be necessary to persist in the use of this diet for days, until all the symptoms have disappeared, and the child is practically convalescent. Cow's milk should be the very last to be allowed. Some of the malted foods answer very well at first. When milk is to be allowed, it is safer to peptonize it, although sterilized milk is sometimes more easily borne. Purgation and repeated purgation is indicated at the commencement of an attack. Calomel is the best drug to employ with soda bicarb. to prevent griping, in divided doses when vomiting is troublesome. Castor oil is safe and effectual and soothing, If vomited, a second dose ought to be administered at once—a child rarely vomits the second dose. During convalescence the aromatic syrup of rhubarb or the phosphate of soda is satisfactory. Daily purging should be continued with these remedies until the temperature falls to normal or nearly so, and until the offensiveness of the discharge ceases. Initial doses of calomel and castor oil have the effect of bringing away matter which has been lodged in some crypt or recess of the bowel. We may feel safe when we see the characteristic calomel stool. In regard to flushing, warm water with sufficient salt added should be employed, and if vomiting be present, that is no contra-indication. It serves for the purpose of lavage, and should be used except in the continued vomiting of acute gastritis. Water and normal saline solution per rectum is even more important, and should be used in all cases. The quantity should be large, and used three or four times daily, and the temperature of the water should be about the normal body temperature. As to sedatives, they are local and general. Bismuth and opium, the former used in large doses; 2 dr. in twenty-four hours are the best. Opium should be used to allay excitement, to remove pain, and to control peristalsis; but it is unfortunate if it is required before the bowel is cleansed. While the temperature remains high, its use should be restricted. It should be used separately, and is contra-indicated in cases where there is any cerebral excitement. Dr. Gordon said he was skeptical of antiseptics. The extent of surface and the poison to be neutralized is great; but after the affected surface is cleansed, they may then prevent putrefaction and irritation of the membrane. If used, they should be given in the food or after it. Asepsis should be secured to prevent decomposition. In the administration of antiseptics in the late stages, much benefit may be had from them, especially HCl. Astringents should never be used.

IMPLANTATION OF THE URETERS IN THE RECTUM IN A CASE OF EXSTROPHY OF THE BLADDER, WITH PATIENT.

George A. Peters (*Candian Practioner and Review*, 1899, xxiv, 590) exhibited before the Canadian Medical Association, and fully described, the two operations he had performed on this subject. In addition to the exstrophy of the bladder, the patient had also had procidentia recti, and was therefore a great trouble and source of annoyance, disgust and loathing to his friends. In this case he has removed the exstrophy of the bladder altogether. The scrotum is present, and the testicles are descended. The condition is a congenital one, and due to defective development in the urogenital parts. At the age of two and a half years the boy first came under the doctor's notice; he is now four and a half years. All the organs and limbs were perfectly formed with this exception. On the broad, flattened and shortened penis, a groove descended down to the extremity thereof, the under skin of the urethra being exposed, and also the mucous membrane of the posterior wall of the bladder. A rudimentary prostrate could be seen, and at the lower part of the bladder-wall the openings of the ureters could be detected. Around these there were excrescences, mucous in character. The surrounding skin showed very little irritation, though it was constantly bathed in the escaping urine. When the surface was dried it would remain dry for fifteen seconds to one minute. A fine probe inserted into these openings of the ureters passed almost directly backwards.

Both kidneys were somewhat prolapsed, as could readily be determined under chloroform. Generally speaking, in these cases the testicles have not descended. There was an entire absence of the public symphysis. With finger in the rectum one could draw forward and easily detect there was no symphysis pubis whatever. The operation was done extra-peritoneally, and this operation would seem to hold out hopes, but the mortality is high. The ureters were fixed into each side of the rectum, and almost immediately the rectum manifested a tolerance for the urinary secretion. In forty-eight hours after the operation the bowels moved, and after that the child got along without any difficulty.

CASE OF URTICARIA PIGMENTOSA FOLLOWING CHICKEN-POX.

Albert Woldert (*Journal of the American Medical Assn.*, 1899, xxxiii, 1022) says: The patient, a male child 11 months of age, of English parentage, was presented for treatment on May 10, 1899.

Family History.—His father and mother are living and in good health, and there are eight other children, all of whom have been entirely free from a rash of the character hereafter described. The father and mother have never suffered from a rash of any kind, with the exception of prickly heat, and both seem to present a history free from specific disease.

Personal History.—The child was born at the eighth month of gestation, there being a hard, dry labor, and version was done. The patient has been fed on the breast, has never suffered from a rash or disease of any variety until he had the chicken-pox when three months of age. At the time he became ill of this latter disease an epidemic of the affection prevailed in the immediate neighborhood. The varicella first developed on the legs—the body, face and hands subsequently being affected. This rash of varicella was first manifest by the appearance of small reddish spots which soon became vesicular, followed by crusts and whitish scars. The duration of the chicken-pox was about two weeks.

Present Illness.—About one week after the rash previously mentioned had disappeared, the mother observed some reddish blotches (which she states were not elevated) on the anterior surface of the chest. When these reddish blotches were first discovered, an area, probably the size of the hand, had been involved. Within a period of about four days from its discovery on the chest a similar eruption became prominent on the abdomen, and several days later was detected on the anterior surface of both thighs; and within an equal length of time the anterior surface of both legs had been invaded. After the rash had spread over the legs anteriorly, and at about the same time, a few reddish spots were noticed on the back of the neck, and within one week had spread over the entire dorsal region of the chest. Two weeks later the calves of the legs became affected. The face and scalp have been free from the disease.

Within a period of probably one week subsequent to the observation of the eruption on the anterior surface of the chest, the area first involved began to turn brownish in color, while the affected portion of the abdomen was yet reddish. Within a week after its first appearance on the abdomen this area became brownish, as did the legs. On the dorsal region of the body the rash pursued the same clinical course in that the affected portion of the skin first assumed a reddish tint, followed within a few days by a brownish one, and at the end of eight months may be observed at this time.

When the eruption first made its appearance, according to the mother's statement, it was not elevated but in the form of distinct blotches, probably half an inch in diameter, and bright red in color. These spots were discrete in form. Whether itching was present or not in the early stages is not known.

At the present time the rash may be described briefly as follows: Over the entire body of the child, except the face and scalp, there exists a light brownish or salmon-colored rash, maculopapular, or perhaps taking the character of wheals, which are found to be both discrete and confluent in form.

DIPHTHERIA AND ANTI-DIPHTHERITIC SERUM.

A. J. TONKIN (*Lancet*, 1899, No. 3973), after a most careful analysis of 200 consecutive cases of diphtheria treated by antitoxin in the Monsall Fever Hospital, Manchester, draws the following conclusions:

1.—The general mortality rate is reduced. The mortality for cases treated during the first three days of illness is reduced to about 3 per cent. and that for all other cases to about 12 per cent.

2.—Laryngeal cases treated early are markedly affected for the better, the death rate being very considerably reduced.

3.—The tracheotomy mortality is very much lessened.

4.—There is less need for tracheotomy if treatment be begun early.

5.—All ages and both sexes are equally affected.

6.—The chances of nephritis are lessened.

7.—When treatment is begun early albuminuria may not appear, will probably not be severe, and will disappear soon.

9.—Paralysis is lessened for cases treated on the first and second days of the illness. The paralysis mortality is much reduced. Extension of disease to the larynx and parts below was not noted after injections of antitoxin.

10.—The only disadvantage noted after its use was a slight discomfort for a few days from urticarial rashes and pains in the joints in a small percentage of the cases. The conclusions arrived at may be taken as a plea for early diagnosis and early antitoxic treatment.

PEDIATRICS

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ORIGINAL ARTICLES

TYPHOID FEVER IN THE YOUNG.*

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THE literature of the typhoid fever of infancy and childhood is very copious; that of the last twenty years is not exactly worthless; indeed, a number of magazine articles are quite valuable. But they do not compare with the very first publications on the subject which appeared at a time when typhoid fever had not long been recognized as an independent morbid entity. Amongst those which should be read today, in order to gather almost everything connected with the subject, with the exception of the Diazo and Widal tests, are Taupin, in the *Jour. des Conn. med. et Chirurg.* of 1839, who explains the apparent infrequency of typhoid fever in the young by the mildness of most cases; F. Rilliet, De la fièvre typhoide chez les enfants, Paris, 1840; the article on the subject in Rilliet and Barthez's great Handbook in 1853; Louis and Andral in 1841; a paper of A. Baginsky in Virchow's Arch. Vol. 49; of Henoch in the Charité Ann. Vol. II, 1877; the thesis of Georges Montmoullin, 1885 (Observations sur la fièvre typhoide de l'enfance), and the article of C. Gerhardt in the second volume of his great "Handbuch," in 1877. The most meritorious of all the contributions to the knowledge of our subject, however, is the little book of Edmund Friedrich, Der Abdominal Typhus der Kinder, Dresden, 1856. My advice to all modern and future writers on any topic connected with the question of typhoid in children is to first consult the 102 pages of that monograph, which is apt to teach the often forgotten lesson that medicine is not of today nor of yesterday; that there have been great and good men worth knowing, before we were born, and that the history of our science and art is sadly neglected amongst us.

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* Read October 25, 1899, before the New York State Medical Association.

Infection and Contagion.—The opportunities for infection or for contagion are the same for the young and for the old. The bacillus has been found active though it had been dry for months; in the soil and in clothing after one or two months. Into water and into the soil it is introduced with typhoid discharges which carry contagion though they have been in contact with putrid material. This experience explains isolated cases and those attributable to the influence of sewers and privies, and the transmission through the atmosphere. Flies have been charged with carrying the poison. Infected water that is used for drinking or for washing the bottles and cases in which milk is kept, is responsible for hundreds of epidemics. Contagion from patient to patient in a hospital or in a tenement, by bedding, by the hands of the attendant, by the use of the same unwashed thermometer for the typhoid and non-typhoid are surely either possibilities or facts. The fetus and newly born may obtain their typhoids through the blood of the mothers; contagion through the milk of the mother is not improbable, though in most of such instances the suspicion may be directed to other sources of the malady. Small infants have a great advantage in this that their typhoids are not frequently attended with characteristic stools, and that for this reason a hospital case is not so dangerous to its neighbors; that they are not roaming about the floors where older children pick up infection, and that the water they drink or eat is almost always boiled. The latter fact alone explains the relative absence of typhoid fever from the first year of life.

SYMPTOMATOLOGY.

Temperature.—The severity of the illness need not correspond with the body temperature. A girl of 9 years, whose case is reported by Gerloczy, in *D. Med. Woch.*, No. 15, 1892, had unconsciousness, diarrhea, very frequent pulse, universal hyperesthesia, roseola, abscesses, and bronchial catarrh, and got well after thirty-nine days. During all this time there was no increase of her body temperature. It appears that very severe cases of typhoid fever, when exhibiting bad cerebral symptoms are liable to have low temperatures on account of the thorough sepsis prevailing. If so, the prognosis is very bad.

Belei Medvei (Intern. Klin. Rundschau, 1891, No. 35 and 36) observed a girl of 12 years that was taken sick with severe headache, restlessness, chill, pain in neck, unconsciousness, miosis, unequal pupils, rapid respiration, and a temperature for four days from 36.8° to 37.5° C. Then the temperature rose and the typhoid symptoms of spleen and cecum, and diarrhea made their appearance.

This absence of high temperature does not astonish those who see a good deal of sepsis and of sickness complicated with weak heart. Temperature and danger need not correspond. The very feeble are not as a rule subject to high temperatures any more than the very old; and quite often the worst cases of sepsis are those which exhibit low temperatures. That is a fact best known to those who see much diphtheria or much puerperal fever.

Observations of high temperatures previous to the appearance and recognition of the symptoms are not frequent. While an adult would be about his work, the infant or child is seldom considered sick enough to claim attention and attendance. That is why chilliness and chills are readily overlooked; indeed, the latter are not marked as a rule in any illness of the young. The rise of the temperature in the typhoid of the young is mostly gradual; it is high in the second stage with slight remissions and gradually falls toward the end of the disease. This rule, if it can be called so, is, however, subject to many exceptions. The temperature of small infants may be very irregular, is in many cases rather low and uniform, in others high with few and short remissions. Irregularities, moreover, often depend on complications. After all, neither those are always right who consider the typhoid of the nursling and infant as a uniformly severe disease, like Baginsky and Roemheld, nor those who make light of it. The degree of individual infection, and the nature of the epidemic are factors that have to be considered.

Complications which disturb the regularity of the temperature curves, are, for instance, otitis, which is quite frequent. In connection with it we should not forget that the otitis media of the infant need not terminate in perforation of the drum membrane; for the pharyngeal end of the Eustachian tube is so large a funnel at that early age as to permit the discharge of pus from the middle ear. An occasional complication is scarlatina; in the last two years malaria was a more frequent complication of typhoid than I have ever known it to be. Suppurating arthritis, diphtheria of the throat or of the vulva, both bacillary and streptococcic, are detrimental in the same way. Constipation is also an occasional cause of the rise of temperature; the regular visiting hours of hospitals, even without clandestine feeding, are apt to increase temperatures. Now and then there are two regular daily curves. That is another reason why the rectal temperature should be taken at least four times in twenty-four hours.

Digestive Organs.—The condition of the lips, the tongue and the mouth may depend on previous catarrh, angina, or the presence of adenoids; otherwise on the severity of the typhoid, and exhibits the same surface changes of the epithelium and mucous membranes that are observed in the adult. The lips are frequently dry, the tongue mostly moist, its epithelium accumulated in the centre, the edges red, or the whole tongue red and dry, covered with dry epithelial scabs, torn or ulcerated. Large ulcerations are mainly noticed during unconsciousness, smaller ones may be quite numerous on the hard and soft palate in every severe case. There is no herpes. The throat shows angina, the tonsils are swollen, in exceptional cases covered with a pseudomembrane which once, in a boy of 9 years, continued through the whole length of the esophagus to below the cardia. In bad cases of older children, or in the few that occur in the nursling when the mouth is kept open because of narrowness in the naso-pharynx, of indolence or unconsciousness, thrush is met with as it is in the worst cases of adult typhoid, or in moribund phthisis. Stomacace is less frequent, noma still less so; the latter is observed only toward the end of the illness, or during apparent convalescence. Fortunately, during nearly fifty years, I met with half a dozen cases only, one in a baby of 8 months, one in a girl of 11 years, all fatal. Baginsky, however, reports a case of noma that recovered. It may be added that noma is not quite so frequent after typhoid fever as after some other infectious diseases, prominent amongst which is measles, where I have seen at least a dozen instances. Parotitis may terminate in perforation, either outward or through the external ear. An abscess of the submaxillary gland I have seen in few cases only. Otitis media is an occasional complication originating in pharyngeal changes. The appetite is proportionate to the fever, the dry mouth and the degree of unconsciousness; during convalescence the hunger is great and conducive to dangerous mistakes in diet. Vomiting is noticed in bad cases, and is caused by the condition of the digestive mucous membrane, occasionally by meningitis, and sometimes by accompanying or consecutive nephritis.

Diarrhea is a frequent symptom in typhoid fever, either before its apparent outbreak, or in the first week, or at a later period. It appears to be of a catarrhal nature, induced probably by the presence of bacilli and their toxins. In the later periods of the disease it certainly depends on the presence of ulcerations. But to expect diarrhea as a common symptom is a mistake occasioned by the statements of many European books. In the other hemisphere diarrhea appears to be more general than with us. I think we miss it in one-half of our cases.

Even the assumption that where there are ulcerations there must be diarrhea is not founded on uniform facts. In ward 28 of Bellevue, in 1877, I had a girl of 11 years that was under close observation during her typhoid fever for several weeks. The case was one of unusual severity—spleen, lungs, skin and nervous system yielding the usual symptoms; there was no diarrhea at any time. She died with the symptoms of perforation. Perforation caused by one of the typhoid ulcerations was found at the autopsy. Nor is this the only case of the same description in my experience. In the Proceedings of the Pathological Society, twenty-five years ago, there is mentioned the case of a man who died in my service in Mount Sinai, also with perforation of an ulcerating intestine, with no previous looseness of the bowels.

Constipation is not an uncommon symptom in the beginning of typhoid fever of the young, though diarrhea may develop toward the end of the first or during the second week, while on the other hand, diarrhea may be observed among the prodromi or in the first week, and be replaced by constipation.

Almost in all cases of typhoid, in the young and in the old, intestinal ulcerations are common. But exceptions to this rule are met with.

S. Flexner and N. M. Harris (Bull. Johns Hopkins Hospital, December, 1897), detail the case of a man of 68 years who had typhoid fever with bacilli in many organs, but no intestinal lesions; A. G. Nichols and C. B. Keenan (*Montreal M. Jour.*, January, 1898) one with positive Widal test, and tumefied spleen and mesenteric lymph nodes, and no intestinal lesions; E. Hodenpyl, one that died on the seventeenth day of illness with ulcerations in the large intestine, but none in the small. This absence of intestinal lesions is rare indeed in the adult; in the young, mainly in the very young, it seems to be less rare. As a rule, it may be stated that the intestinal tract suffers more in advanced age, the blood more in the early.

According to Bryant (*Brit. Med. Journal*, 1899, I., p. 766) fifteen cases of typhoid fever are known to have exhibited no intestinal lesions. His case was that of a boy of 1 year and 9 months; it occurred in a family in which there were other cases of typhoid fever. There was a characteristic fever curve, diarrhea, tympanites, tumefaction of the spleen, and a positive Widal reaction. At the autopsy there were pure cultures of bacilli in the enlarged mesenteric glands, but no intestinal ulceration.

In one of his autopsies Henoch found but one Peyer's plaque that was slightly swelled.

In *N. Y. Med. Journal* of July 29th, A. J. Hartigan, assistant in the Bender Laboratory of Albany, N. Y., reports two cases of typhoid infection without any intestinal lesions. Of the older literature of such instances he quotes Louis, more than half a century ago, and Litten, Moore, and Church between 1880 and 1882. He then continues: "The bacteriological era in the investigation of these forms begins with Banti, in 1887. In his case death took place on the twenty-eighth day of the disease. No intestinal lesions were found but the spleen and mesenteric glands were swollen; in them bacilli morphologically similar to the bacillus typhosus were found." He quotes seventeen authors, and adds his own cases, without however mentioning Hodenpyl.

It should, however, be stated that the statistics of intestinal ulcerations with perforation are not conclusive; many are observed in private practice, not counted, not reported, and forgotten. Now and then, again, a case is reported as a curiosity without reference to the number of cases observed and other important points. Barrier met with two perforations in 24 cases, a very unusual proportion.

Montmoullin reports seven cases in which perforation was diagnosticated, three of which recovered—a proportion of spontaneous recoveries able to arouse the jealousy of any operator.

Barrier and Bouchut made long ago similar observations on the adult, so that they concluded that the anatomical alterations of the intestine may be absent. Chiari (*Z. f. Heilk.*, 1897) while finding lesions in the stomach, and bacilli in different organs, and septic symptoms, found no intestinal lesions. In nineteen collected cases, while the Widal test was positive, the same absence of intestinal lesions was marked. So the latter is not conclusive. The last case of the same nature was published by A. Mc. Phedran in the October issue of the *Philad. Monthly Med. Journal* (1899).

Gurgling in the ileo-cecal region, both with and without pressure, is common in intestinal catarrh, both infectious and non-infectious; that is why, under ordinary circumstances, it should not be held to be characteristic of typhoid fever. It would be more so, if complicated with constipation, and with some of the more frequent symptoms of typhoid fever.

Incontinence of the sphincter ani, when met with is not so much the local result of the infection as of unconsciousness; when it occurs during convalescence, it depends on hyperperistalsis, mostly combined with colic.

Tympanites is usually very moderate, for extensive peritonitis is very uncommon, except with perforation. Sensitiveness of the abdomen is frequent, without the diagnosis of local peritonitis being always within easy reach. This latter form is, however, quite frequent, for in the autopsies of children, or of adults who died of other diseases, local discolorations and thickenings, of a grayish white, or yellow color, are often found on the peritoneal layer of the intestine, above, near or below the cecum. They are the results of previous local peritonitis corresponding with the locality of ulcerations during typhoid fever, or any of the forms of enteritis in former years. Unexpected perforations of the intestine, occurring in advanced years, during apparently perfect health, are the final results of such local peritonitis.

Hemorrhages in the very young are exceptional, and mostly mild in children of more than four years. I have seen it more than a dozen times. In a girl of ten years, the loss of blood was such, there being several hemorrhages in the course of the third week, that I attributed the supervening heart failure to exhaustion only. Both the number and severity of the hemorrhages appear to depend on the character of the epidemic or on the season. In the very young, I sometimes saw no tinge of blood in five years, and in a single season eight years ago, I met with two, not fatal, cases of hemorrhage, in girls of five and seven years. This very autumn I have seen four cases of typhoid fever in children of from five to nine years, in which mild hemorrhages occurred. Of Henoch's nine intestinal hemorrhages, five were quite mild.

Circulatory Organs.—The organs of circulation are not affected to the same extent as in adults. The average heart of the young is stronger, and less diseased. Endo- and pericarditis, embolisms and thromboses are rarer than in advanced age, except in very bad and protracted cases, in which the myocardium was deteriorated by the bacillary toxin. For the same reason complete adynamia is not so frequent at least in the first week or weeks. During increasing inanition, however, the circulation is impaired, as best shown by the coldness of the feet. The gums bleed but rarely, the nose not so often in infants, and the very young, as in older children. The pulse, mainly during the first two weeks, except in the small infant, where it is liable to be feeble and frequent, is either in correspondence with respiration and temperature, or frequently slower and quite strong. When it becomes feeble and frequent, with or without intermissions, it impairs the prognosis, and demands persistent stimulation. It is rarely dicrotic.

When it is in this weak condition, the heart sounds are no longer distinct; they are muffled, one or the other splits in two, and an apex murmur becomes audible. This should not be taken as merely functional; the myocardial weakness which occasions it is toxic and organic, and may remain a permanent lesion.

Spleen.—The irregular respiration of nervous, or frightened infants and children, their tympanitic colon, and high diaphragm, possible exudation in left pleura or lung, and the struggle against examination, whether painful or not, render the diagnosis of the condition of the spleen difficult. In perhaps one-half of the cases it is, however, successful. Percussion succeeds less than palpation, which may reveal the lower edge of the spleen. It is rarely felt before the end of the first week, about the time when roseola appears; earlier, however, when the fever is unusually high. When it diminishes rapidly in the middle of the third week, the prognosis is good; if not, there will be a relapse. When a relapse takes place, the spleen which was greatly reduced in size, is liable to swell very rapidly. Permanence of this swelling of the spleen, however, is much rarer after typhoid, than after severe malarial fevers, and abscesses are quite exceptional.

The Respiratory Organs.—The nasal mucous membrane is dry, covered with thin crusts, and irritated like the lips, which are in a similar condition. Epistaxis is not infrequent in older children. Together with pharyngitis there may be a catarrhal laryngitis. This. and the dryness of the mucous membrane cause hoarseness and cough. Edema of the glottis, which is fortunately rare, causes dyspnea and strangulation. Superficial and deep ulceration of the trachea or larynx, and perichondritis are exceptional, but I have met the necessity of performing tracheotomy in such cases twice. One was the case of a girl of seven, in which scarification of the interior of the larynx was unsuccessful—the child was saved by the operation. The other tracheotomy was made during convalescence on a boy of ten years, because of an abscess developing over and behind the manubrium sterni. He died after many weeks of pyemia, the main source of which was found about the lowest rings of the trachea, and the mediastinal lymph-nodes. Bronchial catarrh is frequent, without much cough, as long as the respiration is shallow; with cough on deep inspiration; catarrhal pneumonia is not rare, and mostly bilateral; croupous pneumonia is also apt to be bilateral. The more frequent form of pneumonia, however, in the protracted cases of feeble patients, is hypostatic, with a tendency to become bilateral at once, and to extend. Pulmonary gangrene is exceptional, but should be feared in every case of infectious bronchopneumonia, complicated with a weak heart.

Pleuritis is comparatively rare, purulent in exceptional cases only, sometimes sanguinolent, though there be no complication with tuberculosis.

Complications with diphtheria of the bacillary variety (nasal. pharyngeal, or laryngeal), are not common. When they occur during the prevalence of a diphtheria epidemic, they are grave accidents.

Urinary Organs.—The urine is mostly of a high color, contains in the beginning much urea and uric acid, less chlorides than normal, indican sometimes, albumin frequently at an early period and more so during the height of the disease, renal epithelia, blood, thin granular casts, and occasional bacilli. The renal irritation exhibited by the microscopic appearance is that which is usual in most infectious diseases, and is due to the effect of the toxin while being eliminated through the kidneys. Symptoms connected with this elimination need not be very marked and need not lead to nephritis. Still, the latter may follow. Even pyuria has been found, for instance, by G. Blumer, in children, one of 13 and one of 10 years (Johns Hopkins Rep., Vol. V).

Retention of urine is rare in children, but occurs when there is coma or much peritonitis. In that case, and whenever it is important to secure urine for examination, catheterization should be resorted to. It is more easily performed in the young than in the adult and more readily in boys than in girls. Under ordinary circumstances, when the catheter is not employed for some reason or other a big ball of absorbent cotton will collect urine enough for the usual examination of the urine. Polyuria is seen during convalescence when much water is drunk. In that period dropsical effusions may be observed with or without albumin; it should also not be forgotten that salicylic acid or antipyrin when employed may cause edema; and, further, that there may be nephritis without albuminuria. The Diazo test is mostly positive towards the end of the first week, and remains so until the middle of the third, sometimes very much longer. At all cvents, however, its absence is no proof against the presence of typhoid fever. Roemheld missed it altogether in many cases.

The observations made by Lafleur and others, that the urine voided after cold bathing exhibits a high degree of toxicity, would rather speak in favor of that treatment; for the more toxic the urine and dangerous to the laboratory animal, the less toxin there is left in the patient. Elimination, as speedily as possible, is what should be aimed at. And whatever diuretic effect there is in cold bathing, as in other remedies, is welcome, as long as the condition of the patient permits it. How rarely that is so, will be seen in the remarks I have to make on therapeutics.

Skin.—The tendency of the skin is to be dry; that is why chronic eruptions are liable to disappear during the illness and to return when recovery is complete. This dryness is also the cause of the transverse fissures under the knee which Koebner explains by the co-operation of the lifeless epidermis, the vigorous growth of the extremities and the flexed posture of the knee; it also causes the extensive desquamation before and during convalescence.

The characteristic roseola exhibits the same peculiarities that are noticed in the adult; it is absent in perhaps 20 per cent. Morse collected 671 cases, in 406 of which it was present; Henoch found it 362 times in 381 cases. It is not uncommon in the very young. I found a few spots on the epigastrium of a newly born that died on the sixteenth day of its life; Gerhardt (Handb. Vol. II, p. 373) met with roseola (and a tumefied spleen) in a baby of three weeks. It may appear as late as the eleventh, even the fifteenth or seventeenth day, is mostly not so copious as it is in the adult, and occurs preferably on the chest and abdomen, but also on the back and on the extremities. When the temperature is high at an early date, roseola may appear early, on the third or on the fourth day, and new crops may occur afterwards. In relapses it is more frequently missed than in the primary attack, but a new crop in the fourth week means a relapse. Petechiæ are not frequent but do occur in children of more than seven or eight years, also in the very young; when complicated with extensive purpuric extravasation they are ominous.

Miliaria is sometimes observed when there is exceptional perspiration; and erythema during the height of the disease when there is much intestinal disorder and coma as the result of direct toxic, or of auto-infection. Eczema is the result of uncleanliness only; gangrene, abscesses, furuncles, and pustules are frequent ocurrences, but in the later periods of the disease only.

In bad cases, and mainly when the hygiene of the skin was neglected, abscesses will appear in it and in the subcutaneous tissue, preferably on the head, face and chest. Slight irritations are sufficient to act as proximate causes. A child of two years developed the first abscess on the epigastrium in consequence of a subcutaneous injection of quinin. More followed, mainly on the hands, fingers, and feet, more than sixty were incised in the course of a few weeks, until, finally, recovery set in.

In a child of two years I saw copious hemorrhages about the ear, groins, and neck with consecutive gangrene; in a boy of nine, extensive destruction of the skin over more than one-half of the abdomen; in both cases with final recovery.

The desquamation of typhoid fever may be quite copious and resemble that of measles or even of scarlatina. On the other hand, some of the eruption of the two latter may resemble the roseola of typhoid fever. That is why the diagnosis may become difficult, particularly as there are cases of which I have seen some, in which the latter and one of the former may be contemporaneous. Thus Cosgrave (*Brit. Med. Jour.*, Jan. 16, 1897), reports five cases in which scarlet and typhoid fever were coincident without seeming to increase the degree of danger. Both started at the same time.

From George M. Gould's American Year Book, 1898, p. 625, I quote Amitrano, who reports a case of typhoid fever developing in convalescence a scarlatiniform eruption with fever which was followed by desquamation. After this fever had subsided marked meningeal symptoms appeared for a few days. These disappeared, and after desquamation was complete a second intense erythema appeared, which was also followed by desquamation after which recovery ensued.

Bones.—The bones suffer in different ways. The characteristic increase of growth after infectious fevers is mostly observed in scarlet, and in typhoid fevers. Epiphyseal and general pain about the extremities is frequent in typhoid fever, and some degree of epiphysitis is common, in consequence of this irritation. Periostitis and osteomyelitis have been observed, and bacilli have been found in the latter. Before the advent of the bacillus, I lost a child of four years with osteomyelitis of the right femur, in spite of early operation. Such cases are fortunately not frequent, but it appears they occur in from one to two per cent. of all typhoid fevers. Chondritis is still more infrequent, with less serious results.

Nervous System.—The nervous system of the young is believed not to be affected by typhoid fever, as it is in the adult. There are cases in which the general condition of the patient appears to be unusually good, compared with the toxic nature of the whole process, and with the height of the temperature. In many instances I concluded, from nothing but the apparent comfort and ease of the patient, when the high temperature would have suggested the presence of severe subjective symptoms, that everything but typhoid fever could be excluded. The same holds good of that in adults. In them ambulant cases are by no means rare, and those in bed often demand permission to get up, expressing the most complete satisfaction with their condition, while their temperature ranges at or above 104. Other children are apathetic, or somnolent, or peevish, and restless. The "typhoid state" should not by itself be taken as a symptom of typhoid fever. It may be absent altogether, and is found now and then when there is no typhoid. Headache is frequently complained of, or is betrayed by vertical wrinkling. Hearing may be bad, the conjunctiva injected and the cornea cloudy under the influence of the toxic disturbance of the trifacial nerve. Grinding of the teeth, sopor, or delirium, and vehement screams resembling those of meningitis, are occasionally met with. Such symptoms, though ever so severe, need not correspond with the elevation of the temperature at all; the latter may be rather low, while the intoxication is quite pronounced. Not every case of seeming cerebral or meningeal symptoms should be attributed to cerebral affection only; still, contractures, or convulsive movements may occur when there is an effusion from the pia mater. Such complications of genuine meningitis with typhoid fever certainly occur, and not only after the eighth or tenth year when gradually the typhoid fever in the young resembles more and more that of advanced age. Kernig's symptom may be employed to clear up the diagnosis of genuine meningitis.

Some of the symptoms common to both may be explained differently. Vomiting may be due to the toxic degeneration of the cerebral substance, or to meningitis. or to the abnormal condition of the stomach, or even of the pharynx, or to nephritis. Coma or delirium I have seen in typhoid, in meningitis, also in cinchonism, and under the influence of salicylic acid.

As a consecutive symptom aphasia was found twenty times by Henoch; half a dozen times I have seen it in the course of many years; with the exception of one that suddenly died, probably of myocardial degeneration, all of them got well. Polyneuritis is not rare. In severe epidemics it is frequently seen, usually with a favorable termination. It is due to tissue alterations, occasioned by the influence of the bacillary toxin. Hemiplegia is rarely observed; a case of "cerebellar ataxia" in a boy of seven, which terminated in recovery, was reported by Luigi Concetti, in *La Pediatria*, No. 8, 1898.

Paraplegia is more frequent, and still more so is local paralysis, under the influence either of the toxin, or of a hemorrhage, or of an embolus. Amongst them are paralysis of the glottis, which necessitated a tracheotomy in a case of Rehn's, and of the abducens (which I have seen in quite a number of cases, most of which were obstinate, some permanent) and of the accommodation muscles of the eye. Paralysis of the sphincter of the bladder is not infrequent.

Psychical disturbances are seen as the sequelae of every infectious fever, mainly scarlatina and typhoid. Four such cases were reported by S. S. Adams to the American Pediatric Society in 1896. They may result from inanition, or from the parenchymatous tissue changes caused by the toxin, or from meningitis. Mania and melancholia are the two forms mostly met with. Not all of them terminate favorably. Two of my early cases died in lunatic asylums in rather advanced years. The motor disturbances not paralytic, which follow typhoid, particularly chorea, have all got well in my recollection, a few only with relapses. It struck me that post-typhoid chorea was less subject to recurrences than other forms.

I now give the particulars of two sets of observations, which will prove that the symptoms, course and complications of the typhoid fever of the young may greatly differ from one another, or from any average description of its nosology. One I published in the *Arch. Ped.*, March, 1885.

The number of typhoid fever cases treated in the Children's Pavilion of Bellevue Hospital, from October, 1882, to September, 1884, was 25. Of these 11 were males, 14 females; 17 ran a single course, 5 had relapses, 3 were sick over a period of from four to six weeks, without permitting the second attack to be distinguished from the first by an alleviation of the symptoms. In seven cases a distinct chill was mentioned as ushering in the illness; in half a dozen more several attacks of chilliness were noticed. The ages of the patients ranged from 2 to 14 years, the average 9. Pain in the ileocecal region was complained of in fourteen cases, diarrhea was noticed in fifteen, bloody stools not amounting to hemorrhages in three; in three constipation was mentioned as a notable fact; in the first week of six epistaxis was observed. Tumefaction of the spleen was noted in sixteen; roseola was observed in fourteen cases. Its first appearance was noticed between the fifth and seventh day; it lasted from five to ten days. Premonitory symptoms were reported in nine cases; in four they lasted two weeks. They consisted in lassitude, loss of appetite, change of temper, and in some few cases diarrhea set in a week before the initiating chill or chilliness. Five of my cases died; one remained stupid and hard of hearing for sometime, but recovered.

Contrary to my experience, as expressed in a lecture on typhoid fever (*Medical Record*, Nos. 17 and 18, 1879), in which I claimed a mild type and a low mortality for the typhoid fever of infancy and early childhood, this Bellevue service of mine had a mortality of 20 per cent.—similar to that of Œsterlen, who estimated it at 22 per cent., and Friedrich, who reported 23 per cent., in children under five years of age.

In 1882 and 1883 we had a bad epidemic of typhoid amongst all classes and ages. The guests of summer hotels and boarding houses imported hundreds of cases, and the whole population suffered in consequence, infants and half-grown children as much as the rest, and the mortality all over the city was high. The hospitals have always more than their share, however, and their statistics must necessarily be erroneous. Errors are occasioned by the fact that with us at least hospitals do not contain the average cases, but as a rule those only who fare badly and promise badly. A poor family will nurse their children, while they require but little care; only that one which is seriously ill, and gives a great deal of trouble and a bad prognosis is sent to the hospital. Of that class, many will die. That is why the mortality of a hospital does not indicate the general character of the epidemic. That is also why the general practitioner, singly or collectively, is the better judge and statistician. He sees all the cases in a family, those remaining at home, and those sent to a hospital; sees the mild and the severe cases, and counts those who survive. Six cases in a family, one of which is sent to and dies in the hospital, may give the family practitioner a mortality of 16, the hospital attendant one of 100 per cent.

Another series of observations was published by F. Sbrana (*Arch. de Méd. des Enf.*, Jan. 1899). He reports on seventy-two cases of typhoid children, from 16 months to 8 years old, whom he observed in Tunis; 75 per cent. of all cases occurring in that sub-tropical city were in children; in one family there were four, in another three cases. Why there should be a prevalence of cases in children, is perhaps best explained by Jeannel's report made to the fourth French Congress of International Medicine, in 1898. He observed an epidemic of typhoid fever, in which the communication may have occurred through the dust of the street into which the typhoid dejections were thrown. The principal and first sufferers were children who were playing in the street, and not very particular as to what they carried to their mouths. Both their size and their habits I counted many years ago and repeatedly since, amongst the causes of the frequency with which follicular angina, and also diphtheria are observed amongst the young.

The premonitory symptoms of the majority of cases consisted in anorexia, with headache, vomiting and constipation; the run of temperatures was quite irregular. In 50 per cent. there was epistaxis in the beginning; diarrhea began at a later period of the disease. Gurgling in the ileo-cecal region was not observed in patients less than three years old, and was altogether not common. Roseola was noticed in one-third of the cases, the spleen was enlarged in every one after the fifth or sixth day. There was no intestinal hemorrhage, and the fever disappeared by lysis. There was a furfuraceous desquamation in four cases; the mortality was 11 per cent.

There were many complications; suppurating parotitis in two; peritonitis from perforation, one; purulent pleuritis, one, with considerable dilatation of the stomach during convalescence; aphasia in five; orchitis of the left side without suppuration, one; and meningitis, three; two of the last terminated fatally. All these cases looked very much like cerebro-spinal meningitis; still there was the tumefied spleen, and no herpes. In other cases there were milder cerebral symptoms, such as dysphagia, partial convulsions, aphasia, and inequality of the pupils, without strabismus, or vomiting.

AGE, MORTALITY.

Friedleben placed the greatest frequency of typhoid in childhood between the 5th and 8th year, Griesinger between the 5th and 11th, Lœschner and Friedrich between the 5th and 9th, Rilliet and Barthez between the 9th and 14th, Barrier between the 5th and 15th year, and Fauconnet between the 10th and 20th year. A few other figures contained with the above in *Gerhardt's Handbuch*, Vol. II., are as follows: Murchison noticed that 20 per cent. of all the inmates of the fever hospital were less than 15 years, Von Franque collected all the typhoid cases of the province of Nassau, and found 2,021 of 11,028 to be less than 10 years, Gaultier gathered many French statistics, and reported 31 per cent. below 15 years. In a small town Baginsky counted sixteen cases under 10 years out of a total of 50, Rosenthal 28 in 115, Schædler 11 in 144.

Holt (Textbook, p. 1,008) quotes 970 cases from eight authors; 8 per cent. were under 5, 42 per cent. from 5 to 10, 50 from 10 to 15 years old. Montmoullin (*Thèse de Paris*, 1885) reported fifteen cases under two out of a total of 295 under 15 years. Schavoir in Stamford, Conn., collected 406 cases of all periods of life; of these 68 were under 5 years, 72 between 5 and 10 years. Morse reports 284 cases in the Boston City Hospital; 3 were under 5 years, 77 from the fifth to tenth, and 204 from the tenth to the fifteenth year. He also concluded that typhoid is unusual in infancy, because the Widal reaction was negative in two cases of simple diarrhea, forty-five cases of fermental diarrhea, and three of ileo-colitis, with the exception of one whose mother had typhoid fever years before. It will be seen, however, that in none of these cases the diagnosis of typhoid fever was made or suggested. As there was no typhoid, there was no Widal.

All these figures and results are in confirmation of the earliest observations. Griesinger for instance wrote in 1857 (*Virch. Handb.*, II., 2, 124): "Typhoid fever is very rare in the earliest infancy; it is only from the second to the third year that the disposition becomes greater; after that time it grows rapidly, so that typhoid fever is quite frequent amongst us." (Germany). Bouchut denies the occurrence of typhoid in the newly born. According to him it occurs first between the first and second year.

There are, however, well observed cases of typhoid fever in the newly born. Gerhardt quotes Charcellay who saw it in a child of eight days; Bednar, five days; Necker, thirteen days, and reports a case of his own at three weeks. I had a case, the mother having typhoid fever when the child was born. In the latter I diagnosticated the disease on the ninth day. There were a few spots on the epigastrium on the sixteenth day, a large and soft spleen, and Peyer's plaques swollen and rather soft, not yet ulcerated. The infant died on the sixteenth day of her life. C. P. McNabe (*New York Medical Journal*, Feb. 19th, 1898), observed typhoid fever, complicated with whooping cough and pneumonia in a baby a few weeks old.

The possibility of the transmission of typhoid fever to the fetus is beyond any doubt. Clinical experience proves such a transmission for typhoid fever, malaria, measles, scarlatina, variola and syphilis; also in erysipelas, relapsing fever, tuberculosis and sepsis. In young sheep anthrax was found as early as 1882; chicken cholera and glanders are transmitted in the same way. But it is possible that the epithelium of the placenta is a frequent barrier, and the suggestion of Malvoz's that the transmission of an infectious disease from the mother to the fetus takes place only when the villous epithelium is injured, I have always considered to be correct. He emphasizes the fact that of twins one may be affected while the other goes free. All these points are discussed by W. Fordyce in the *Brit. M. Jour.* of Feb. 19, 1898. The typhoid fever of the mother may destroy the fetus, may allow it to be born alive but weak, or alive and vigorous. Which of these results occurs depends on the amount of bacillary toxin transmitted or on circumstances unknown to us in an individual case. But the facts are firmly established. The fetal intestine was found diseased by Manzoni in 1841, Charcellay in the the same year, Weiss in 1862. Bacilli were found in the fetus by Reher and Neuhaus in 1886; in the blood by Eberth in 1893; and the same results were obtained by Freund, Levy, Ernst, and Durck. Other good observations were made on the living child. The Widal test was found positive in a healthy infant 7 weeks old, that was born when the mother was in the third week of typhoid fever, by Crozier Griffith (*Med. News*, May 15, 1897); and by Mossé (*Progrès Méd.*, March 13, 1897) in a newly born, whose mother had typhoid fever when in the sixth month of her pregnancy, and whose milk and placental blood gave the same positive reaction. Perhaps the case of Landouzy's will also prove the possibility of transmission though not through the placenta (Soc. de Biol. Nov. 6, 1897). A healthy baby showed a positive Widal test, while the woman had typhoid three months after confinement. As the baby had no other symptoms of typhoid fever, it is fair to suggest or to believe that transmission to a sufficient degree took place through her milk.

The transmission of typhoid bacilli into the fetus is demonstrated by a case reported by Etienne (*Gaz. hebdom.*, 1896, No. 16). A woman of 18 years expelled on the twenty-ninth day of her typhoid fever a fetus in the fifth month of utero-gestation. In its blood taken from the right heart, the spleen, the liver and the placenta were typhoid bacilli, but no changes in the other organs. It appears that the death of the fetus resulted from the toxin which acted so rapidly that the organs had no time to participate in the process.

If, however, typhoid fever has been found by some in the fetus, in the newly born, in the nursling, there are those who never saw it at that age, and therefore are inclined to deny its occurrence.

In the *Arch. Ped.*, 1895, p. 916, Dr. W. P. Northrup speaks of the results of 2,000 autopsies in children under 5 years. Not one presented the lesions of typhoid fever. He also quotes Dr. N. Page of the Children's Hospital in Philadelphia, who says: "I have had from six to ten typhoid cases in children in the house constantly since I came on duty here, but not one of them was under 6 years." Dr. Ch. G. Kerley observed not a single case of typhoid fever among 1,326 children, 85 per cent. of whom were under 2 years, and 95 per cent. under 5 years of age; nor was a single typhoid lesion found in 410 autopsies. He adds that there was no case in the three years following his observations, under his successor in office.

Again, however, Steffen reports on 148 cases of typhoid in the young; 2 were less than 1 year, 26 from the third to the sixth, 34 between 6 and 9 years. Of Wolberg's 277 cases, however, the majority were as usual from 6 to 12 years old.

Henoch reports on 9 cases below 2 years, 59 from 3 to 5, and 187 from 5 to 10 years, with a mortality of 12 per cent. He also reports of the finding of typhoid ulcerations 14 times in 26 autopsies. Ashby and Wright declare typhoid fever to be "not common under 3 years," while Rilliet and Taupin as early as 1840 pronounced it to be "not at all rare." About the same time Billard published his experience. According to him typhoid fever was rare in the first year, increased slowly toward the fifth, and was quite frequent between the fifth and fifteenth.

Maria Rivoire described an epidemic which reigned in Marseilles in 1896 and 1897 (*Thèse de Montpellier*, 1898). In and after May of 1897 there were 105 cases among children, of whom 21 died—20 per cent.; in 1896 43 cases with 15 deaths—31 per cent. Of 1270 cases collected during those two years there were:

Below 5 years 26, 6 deaths—23 per cent.

Between	5	and	10	years	59, 13	deaths	—22	per cent.
"	10	"	15	"	102, 24	"	—23.5	"
"	15	"	20	"	289, 42	"	—14.5	"
"	20	"	25	"	347, 63	"	—18.5	"
"	25	"	30	"	262, 54	"	—20.5	"
"	30	"	40	"	145, 25	"	—17	"
"	40	"	50	"	30, 7	"	—23	"

Above 50 years 10, no deaths.

According to these figures the largest mortality occurred between the tenth and fifteenth year; the mortality of children below 5 or below 10 years equaled that of adults between the fortieth and fiftieth year.

H. Curschmann (*Nothnagel, Spec. Pathol. u. Therap.* III.) reports on 451 children (250 male and 201 female) observed with typhoid fever in the Hamburg Hospital between 1886 and 1887. Of these, seven were 2; nine were 3; sixteen, 4; eighteen, 5; thirteen, 6; twenty-two, 7; twenty-seven, 8; forty-four, 9; fifty, 10; fifty, 11; sixty, 12; seventy-one, 13; and sixty-four, 14 years old.

Of Brouardel's 16,036 cases observed between 1880 and 1889, 36 were 1 year and under, 1041 under 5, 1,265 from 6 to 10, and 1,386 from 11 to 15 years old.

According to an excellent report, published by Dr. I. Rudisch, in the Mount Sinai Hospital reports (1899), on 974 cases of typhoid fever, which occurred from 1883 to 1898, 124 occurred in children below ten years, and 90 between the eleventh and fifteenth; a total of 214 cases. Of these one was six, another ten months of age. There were altogether below five years 37 cases, six of which died = 16.21 per cent., and 87 between the sixth and tenth, 7 of which died = 8.75 per cent. The exact figures for the first year were 5 cases with 3 deaths, for the second 6 with no death, the third 5 with no death, the fourth 10 with 1 death, the fifth 11 with 2 deaths, the sixth 16 with 2, the seventh 20 with 1, the eighth 11 with no death, the ninth 24 with 3, the tenth 16 with 1, and from the eleventh to the fifteentht 90 cases with 9 deaths.

One of the principal points made by Dr. Northrup is that the ulcerations claimed for typhoid fever are not characteristic at all; that, indeed, they are found in common intestinal diseases of non-infectious nature. That is what Hervieux contended thirty years ago, when he said that follicular swellings and superficial ulcerations in the intestines, and swelling of the mesenteric lymph nodes were found without any specificity in the morbid process.

This observation, and the assumption of uniformity in the nature of these ulcerations, was indeed the reason why in France for a long time the terms typhoid fever and dothienenterite were synonymous. But as early as 1877 C. Gerhardt emphasized the fact that the peculiar typhoid ("markige") infiltration and the formation of scurfs, which are mentioned now and then are distinctively different from the ulcerations of follicular or other enteritis. It is true, however, that in many cases there is a difference between the young and the adult. The changes in the plaques of the former are more hyperplastic (they are not so in enteritis), of the adult more necrobiotic. Nowadays the presence of the bacillus typhosus in and about doubtful ulcerations would furnish another positive diagnostic sign.

DIAGNOSIS.

It is determined by the symptoms enumerated above, and while it is mostly easy in the adult, becomes more difficult in the very young. I choose to take it for granted that in doubtful cases the diagnosis of dentition and worms is nowadays confined to a certain class of illiterate women and obsequious practitioners only; but the differential diagnosis of typhoid in the very young from a catarrhal fever, or influenza, or glandular fever, even from an intestinal auto-infection may remain difficult through many days—even for the skilled and thinking. The fever curve is very apt to be irregular, mainly in enfeebled children and in the presence of one of the many complications. There are even some cases in which the disease sets in suddenly with a high temperature; there are those, however, in which a high temperature is apt to be deceptive, for I believe with A. Fairbarn (*Jour. Am. Med. Ass.*, April 12, 1897) that the first symptoms may be overlooked for many a day. A cerebral pneumonia may exist half a week or more without being recognized, until the development of the disease and careful examination clears up the diagnosis. Influenza may assume the characteristics of typhoid to a certain extent. Meningitis may be recognized, if by no other symptoms, by means of a lumbar puncture and examination of the cerebrospinal fluid. Altogether a rather slow pulse when not in proportion to the height of the temperature, the condition of the tongue, the swelling of the spleen, and the presence of roseola render the diagnosis secure even without the Diazo and Widal tests. In other instances, however, we arrive at a result by exclusion only. There is hardly a single clinical symptom which alone proves the presence of typhoid fever; the simultaneous presence of many is a more perfect guide. The diazo test is nearly conclusive when tuberculosis and pneumonia may be excluded; it may be expected to be positive in 90 per cent. of all the cases between the end of the first and the middle of the third week. The greatest difficulty is met with in those infants that yield few or no local symptoms except those of a septic infection only. Lymph nodes are sometimes found tumefied; their swelling in the inguinal region, however, from other causes is so frequent that, when found alone it should not count. The presence of herpes should generally be taken as proof of the absence of typhoid fever. The presence of the bacillus in the discharges would be the best symptom if we commanded a readier practical method for its discovery, provided there be other symptoms which make the case suspicious of being typhoid fever.

Much is naturally made of the presence of bacilli in the discharges of doubtful cases, and quite often the diagnosis had to depend on it. To what extent is that justified? There may be cases in which I should utterly refuse to accept the diagnosis of typhoid fever unless there be some one or more adjuvant symptoms, for the same reason that makes me refuse the diagnosis of diphtheria when there is nothing but the presence of Klebs-Loeffler bacilli, or that of tuberculosis when bacilli are deposited on some mucous membrane.

PROGNOSIS.

The character and the mortality of typhoid fever are apt to vary according to seasons and epidemics. Baginsky places the mortality at 9 per cent., Montmoullin at 8.8, Steffen at 6.7, Henoch at 7.5, Wollberg at 4.7. In hospitals it is liable to be greater than in general practice for the reason that as a rule bad cases only are sent to public institutions. Still, in the Children's Hospital of Philadelphia, there were 137 cases, three of whom died (2.66 per cent.); in the Boston City Hospital, the mortality in 284 children, under 15 years, was 6 per cent., while amongst 3,396 adults it was 13.5 per cent., and Holt collects 2,623 children with a mortality of 5.4 per cent. On the other hand, of Schavoir's (*New York Medical Record*, 1895) 192 patients (mostly in private practice), under 15 years, 2 died = 1 per cent.

Nurslings and the very young, also those approaching adolescence, are more endangered than those in the intermediate years, according to Roca (*Ann. de Policlin. de Bordeaux*, 1897), and Roemheld (*Jahrb. f. Kinderh*,, Vol. 48). High continuous temperatures are not always fatal, though they be complicated with a frequent pulse, nor are petechiæ absolutely ominous. A moderately slow pulse, and the occurrence of marked remissions are favorable, particularly when the fever is not terminated within three weeks. This continuation beyond the usual time is quite common in the very young, and when the case is apparently mild. A speedy recovery may be expected when the spleen gets smaller about the sixteenth or seventeenth day; if it remains large, the case will go on. Complications of any kind, pneumonia, meningitis, previous heart diseases, with feeble peripheral circulation (cold feet), laryngeal edema, hepatic or splenic abscesses add to the danger; that with malaria is not very dangerous provided it be recognized at an early time. Some of these complications are frequently called sequelae; but as they share in the microbic etiology of the disease, they should be considered here. To this class belong erysipelas (mostly facial), otitis media, hematomata, which are sometimes very large and destructive to the implicated or superjacent cutis, arthritis, furunculosis, abscesses of all kinds, and occasionally an anemic dropsy, not attended with an affection of the kidney, the occurrence of which was noted by Griesinger nearly half a century ago.

Relapses are by no means rare, either after complete apyrexia, or with a moderate amount of remission about the end of the third week, or without any or much change in the temperature. They come after apparently mild, or after severe cases, without or with errors in hygiene or diet; when there was apyrexia, they were mostly of a shorter duration than when the fever remain continuous, or exhibited a slight remission only.

TREATMENT.

The food should be liquid. My invariable rule is, with adults also, to insist upon that demand until apyrexia has lasted ten days. The patient should be encouraged to drink water frequently; the admixture of from eight to twelve drops of dilute hydrochloric acid to a tumbler full of water, or sweetened water, is a pleasant and disinfectant drink. Of albuminoids, peptones, and "peptonoids," and of beef-juice, only a certain quantity is digested or absorbed; the good that is to come from them is not from swallowing, but from digesting. The lips and tongue should be kept clean. Older children will wash and gargle. When the tongue is red and dry, and fissured, one or two daily applications may be made with a clean camel-hair brush, of a one or two per cent. solution of nitrate of silver. The nose should be kept clean, washed out with normal salt solution in urgent cases. To guard against hypostasis of the lungs and the cord, the posture in bed should be changed from time to time.

A purgative dose of calomel in the very beginning will act beneficially; not so after the second half of the first week when diarrhea and hemorrhages may be caused by it. Constipation requires warm water enemata daily; diarrhea, frequent irrigations with water of from 95 to 100° F. When the discharges are offensive, thymol, or permanganate of potassium may be added in a proportion of 1: 3,000–4,000. Internally, bismuth, sulpho-carbolate of zinc, salol, naphthalin are indicated. Bronchial catarrh demands no special treatment in most cases; if the secretion is viscid, and dyspnea present from that cause, camphor is serviceable. Collapse requires strong stimulants, by mouth and sub-cutaneously; diluted alcohol, camphor in sweet almond oil 1:4, and the salicylate or benzoate of sodium and caffein, soluble in two parts of water, answer best for that purpose. Insomnia, great excitement, and consecutive psychoses may require chloral hydrate. When the heart is feeble, croton chloral should be selected instead. When these symptoms are accompanied with heat of the head, cold applications to the head, ice water, ice bags are soothing. The head should, under such circumstances, be kept as high as comfort permits. Sopor or coma should be treated with cold affusions, while the body is submerged in water of 90 or 95 degrees.

Is it desirable to resort to antipyretic treatment? If so, in what class of cases, mild, medium or grave? This latter classification, however, should not exist, for the apparently mild case may turn out to be a grave one. Or is it desirable to allow high temperatures to persist?

The vis medicatrix naturæ has been eulogized in infectious fevers. However, the wholesome influence of intense body heat on bacteria and toxins has become very doubtful, and good observers, like Flügge deny the new gospel of the increase of phagocytosis by high temperatures absolutely. Nor is the disintegration of tissues by heat alone successfully contradicted. Thus, after all, we need not enjoy the presence of high temperatures as a blessing, disguised or undisguised, and should reduce them. This much is certain, that the comfort of the patient is enhanced, and grave nervous symptoms alleviated, when the hot, dry skin becomes cooler and moist in proportion to the reduction of the general temperature.

Which are the means by which we can effectually obtain it? The number of antifebrile medicaments has grown immeasurably; the cautious practitioner will do well, however, not to embark in the dark sea of unknown territories, guided by nothing but the flashlight advertisements of the drug manufacturer. Some of the new remedies are actual dangers. Acetanilid is a poison like all anilins; it changes hematin into methemoglobin, and thus causes the cyanosis that is so frequently noticed. Antipyrin is perhaps the safest; sodium salicylate annoys the stomach and the kidneys, which are very liable to suffer from the typhoid toxin alone. Quinine acts well during intermissions and remissions, not however when high temperatures are continuous. The cardiac stimulants—digitalis, strophanthus, spartein, camphor, alcohol—which improve the general and cutaneous circulation, and thereby the radiation of heat from the skin, are mighty weapons in the hands of the intelligent medical adviser, who moreover need not limit himself to the few remedies I mentioned.

All of these remedies, however, do not exhaust our resources; indeed they are only of minor importance. Without knowing all of it the old poet exclaimed "*hudor ariston*," the water is the best. Cold water and warm water are our most reliable and at the same time the safest antipyretics. Stress should be laid on the latter title, because many of the very apostles of hydrotherapy, perhaps influenced by shaky phagocytosis and toxin theories, belittle it in comparison with the nerve stimulating powers of water. Now, cold bathing is frequently contraindicated; it is not borne when the heart is feeble from whatsoever cause; for instance, long duration of the disease, complications with pneumonia, peritonitis, or hemorrhages, previous bad health, or, in the adult, excesses. No stimulant given before or during the procedure is certain to counteract the paralyzing effect on the peripheral circulation. When after a cold bath the feet remain cold and the pulse small, the bath was contraindicated, and did harm. The patients in public hospitals are quite often of a low vitality, and feel the cold bath as a shock; at all events, most of those who arrive in the hospital after a week or two have passed the time when the cold bath might have done good. Of this nature is the latest experience of I. Rudisch in the Mount Sinai Hospital (Mt. S. Rep., Vol., 1899). He says: "The Brand treatment reduced the mortality a little over 2 per cent. This reduction occurred in the cases which had been sick two weeks or longer, outside the hospital. Since the introduction of the Brand treatment there has been an increase in the number of cases of pneumonia and phlebitis, and a decrease of those of furunculosis and nephritis. Relapses have increased 2.5 per cent. The death rate in the relapse cases before and since the introduction of the Brand treatment is practically the same. It has not reduced the number of complicated cases as a whole, but has decreased the number of deaths from toxemia in the causation of the mortality of typhoid fever."

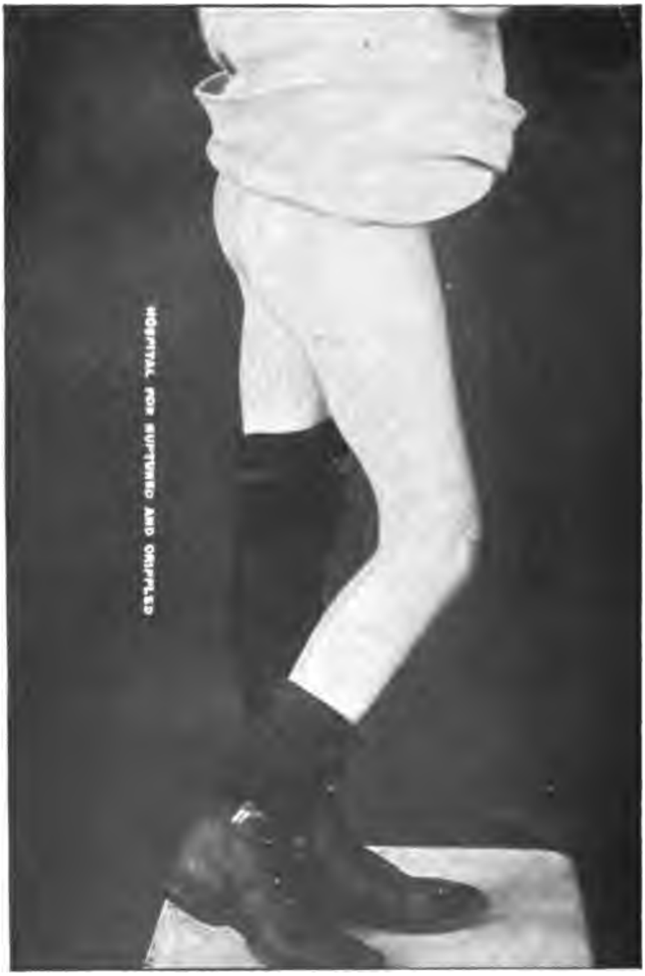
This does not speak well for the indiscriminate use of cold water for hospital patients.

The dangers of cold bathing are not encountered in warm bathing. This is not the place to prove for the thousandth time that a bath of 95° or 90° F. when of sufficient, even when of short duration, will reduce a temperature of 104° or 106°. It is simply a fact. Such a bath may easily be given every three or five hours; even apparently mild cases should have two or three daily, from the beginning to the end of the illnesss. They reduce the temperature, the accompanying frictions stimulate the cutaneous and general circulation, the general condition is improved, the so-called typhoid state relieved, and relapses become less frequent. Warm bathing should be *the* principal treatment of all typhoid fevers, not to the exclusion, however, of occasional medication calculated to have similar effects. The combination of frequent and protracted bathing with proper medication will always remain appropriate, though our resources should, as we expect, be increased by serotheraphy. The searching for it, and the frequent insufficiency of medication in skilful or unskilled hands, both by thoughtful or routine practitioners, have caused us too often to neglect our most active helps. Even where serotherapy has scored its most deserved laurels, for instance, in diphtheria, the almost boastful limitation to the use of antitoxin, to the exclusion of other internal and external treatment, is a mistake. What is to be treated is not the bacillus, but the organism invaded by the bacillus; and the clinician should know that bacteriology is an indispensable aid to clinical medicine, but not clinical medicine itself. Thus, when we shall find an antitoxin for the typhoid bacillus, we shall still require adjuvant treatment for the typhoid man, woman and child.

DEFORMITY FOLLOWING EXCISION OF KNEE.

By Henry Ling Taylor, M.D.

THE knee of a child should practically never be excised for osteitis, and at present practically never is by the best surgeons. Excessive shortening often follows, from destruction of the epiphyseal junction, where growth in length normally takes place, and in a large proportion of cases there is a recurrence of deformity from failure to get bony union. It should be said in addition that the large majority



of cases of osteitis of the knee in children respond admirably to protective orthopedic treatment. Even in desperate or neglected cases, when the joint is riddled with sinuses, opening the joint freely and washing out, with erasion, when necessary, will usually accomplish the objects of an excision, and preserve the epiphyseal line.

Dr. William R. Townsend, in an admirable paper, published in the *New York Medical Journal*, for April 1, 1899, publishes eight cases of deformity following excision of the knee, performed at from two to seven years. All were followed by flexion—in five cases it was 40 degrees or more—and several by in or out knee. The shortening was seven inches or more in three cases.

Our picture was taken from a girl of eight, recently seen at the Hospital for the Ruptured and Crippled. The knee is stiff, knocked and everted, and shows about 45 degrees of flexion. It was excised about a year and a half ago, in a metropolitan hospital, for an osteitis of three weeks' standing. After being kept in plaster for about four months, the child was allowed to go without support, when the leg gradually bent until it reached its present condition.

In these cases, correction under ether, using moderate force, should first be tried. If this fails, a supracondyloid osteotomy will correct the deformity in the milder cases, and a second excision in the more severe.

60 West Fifty-fifth Street.

Croup.—The following prescription, suggested by JOSEPH HOLT, of New Orleans, has been tried many times with the happiest results:—

℞	Chloral	gr. lxxv
	Potassii bromidi	gr. xlv
	Ammonii bromidi	gr. xxx
	Aquæ cinnamomi	℥ij

Sig. Teaspoonful, and repeat in twenty minutes if not relieved.

This is intended for a child about 7 years old. For younger children the dose is slightly diminished. The chloral relieves the spasm of the larynx, and the bromides allay the nervousness; so that the patient is soon asleep, and wakes the next morning as well as usual. The first dose generally gives relief. This prescription is of no benefit in true or membranous croup.—(*Practioner*, 1899, lxiii, 356.)

EDITORIAL COMMENTS

Intestinal Antisepsis

The causes of the intestinal disorders of infancy are practically always bacteria or their products. It matters not whether the germs be introduced from without or be normal inhabitants of the intestine which have been rendered virulent by an altered environment.

The efforts for the more scientific modification of cow's milk for infant feeding have as one of their objects the proper adaptation of the food to the requirements of the child, without leaving in the digestive tract a useless residue to undergo putrefaction. Although the food be sterilized before administration, if too large a residue be left it is quite conceivable that it may gradually produce such changes in the bacteria which normally inhabit the intestinal canal as to cause them to change their character. That the bacterium coli commune may so change is well known.

In both the prophylactic and causative treatment of the diarrheal disorders of infancy, the principle of antisepsis should always be borne in mind. In a recent paper on Intestinal Antisepsis (*British Medical Journal*, November 4, 1899) I. Burney Yeo points out the important fact that the medical conception of antisepsis is not absolute as is the surgical; that the scope of intestinal antisepsis is to prevent or neutralize auto-intoxication proceding from the alimentary canal.

The virulence of organisms may be diminished also by modifying their environment. In order to benefit our patient it is not absolutely necessary to kill the germs.

Yeo considers as ideal antiseptics for the small intestine such substances as are insoluble in the stomach and to some extent volatile, so that their influence may be diffused into the gases in the intestine.

Bouchut has shown that the toxicity of the urine varies directly as the amount of putrefaction going on in the intestinal canal, and that such putrefaction can be diminished by the employment of certain intestinal antiseptics. The amount of aromatic sulphates present in the urine, provided aromatic drugs have not been administered, is also a gauge of the putrefactive changes in the intestine. These aromatic sulphates are diminished by irrigation of the colon. Dr. V. Hurley and Dr. F. Goodbody, using aromatic sulphates as a gauge, have found that when putrefaction is increased, calomel in small doses tends to diminish it.

All are now agreed upon the efficacy of irrigation of the colon in infantile diarrhea. Many employ lavage of the stomach in addition. It is satisfactory to know that the correctness of the present methods of treating digestive disorders of infancy is emphasized by the above investigations.

T.

The Long-Suffering of Medical Men

Scarcely anyone outside the profession can realize the extent to which, in these latter days, the personal solicitation of medical men by representatives of book publishers and drug firms has progressed. Most of us, from a desire not to be uncivil, have thus far submitted to the imposition with what grace we could summon, causing thereby a vast increase in the number of agents, a growing consciousness on their part of owning the entire profession, an office chokeful of useless samples of every possible and impossible formula, and a damaging loss of the physician's time. We believe that drug men should confine themselves and their advertising matter to the press and the mails. It is trying enough to one's temper to receive by mail a sealed advertisement, but when we are desired to sit meekly for a quarter or half hour every day and listen to a glib discourse on the chemistry of food-stuffs, or the predigestion of milk, or the destruction of bacteria by a patented germicide, we think it time to rebel. Many drug firms confess, if questioned, that they maintain at a loss the practice of visiting the houses of physicians and leaving samples of medicines and appliances; they feel, however, that they must maintain the nuisance in order to keep the pace set by business rivals. The following notice was recently found in the hallway of a physician of large practice in this city. He claimed to have been "driven to it by persecution":

> "Dr. ——— positively refuses to be interviewed by representatives of any book-publishing firm, or the makers or agents of any line of drugs, proprietary preparations, or surgical dressings."

We simply quote this as it stands and leave our brethren to meditate! B.

Primum non Nocere

A well-known and successful specialist of this city said recently: "Humiliating as the confession may be, one of the best things that can be said of a medical man in the long run is that he has done no harm." Before the days of cleanly surgery and rational medicine many physicians of well-constituted mind fell almost of necessity into the current errors of the time. If then we read Lænnec's loud praise of tartar emetic in toxic doses for pneumonia, or learn of the famous Vienna oculist who habitually moistened his knife with his lips before operating for cataract, or hear of the monstrous fly-blister put upon Dr. Samuel Johnson's spine for hemiplegia,—we may heave a pardoning sigh. Better light was hardly to be had. The times of that ignorance we must wink at. But (to modify the biblical allusion) science now *commands all practitioners to repent;* to consider diligently, in every several case, the probable and improbable courses of nerves, and actions of drugs, and influences of diet. Such information is now everywhere accessible; and only when it has been thoughtfully studied and assimilated, can the Doctor hope to be satisfied in his own conscience if something goes wrong.—Unfortunately, there seems to be a personal element essential to real experience. One must himself sin and suffer in order to know. It is an old story, "Knowledge of good bought dear by knowing ill." After the medical man has once cut the pneumogastric nerve in trying to tie the carotid, or disfigured a pretty girl for life by acne-pustules from bromide hastily given, or caused a uremic fit in a chronic diabetic by too rigid a diet of albumin,—he knows his error; often (it is to be regretfully admitted) not till then! B.

Application of the Rule to Pediatrics

Particularly in pediatric practice, the educated practitioner will be on his guard against useless and irrational therapeutics. In an untried constitution, he will begin with small doses and repeat them as needful. The result will be quite as sure, and the uncertainty not half so risky. He will give his coal-tar antipyretics with great circumspection, and be sure that his Dover's powder was compounded by a careful apothecary. He will not be satisfied to leave important surgical work for the nurse to undertake in his absence. She may, with the best intentions, irrigate the baby's lung instead of his stomach, or by soiling the catheter on an ill-washed gown worn with her last case of puerperal sepsis, excite a fatal cystitis. He will not forget that the popular Latin maxim about the reparative power of nature is oftenest true in children, and that a minimum of interference is called for. He will not even give a calomel triturate, till the case has been examined, and at least a probable diagnosis made.—At the same time he will know that sins of omission are punishable. He will not tell the mother that the baby's running ear will "stop of itself," nor give borax-water for trachoma, nor let the croup-case be moribund before attempting intubation. "Eternal vigilance" will mark his professional walk and conversation. and only eternal vigilance will save him, as time goes on, from many a moment of poignant self-reproach. B.

PRACTICAL NOTES

Threadworms.—In the treatment of threadworms large injections must be used, and in view of the difficulty of dislodging the worms from the appendix, and their possible presence in the small intestine, the injection should be combined with the administration of of drugs by the mouth. The vermiform appendix is a common habitat of oxyuris vermicularis in children.—Still (*Med. Record*).

Emetic for Infants.—

℞	Pulv. ipecac	0.50 cgm.
	Antimonii et potassii tartrat	1 gm.
	Oxymel. scillæ	10 "
	Aquæ destil	10 "

M. S. Teaspoonful every ten minutes until vomiting occurs (for a child 6 to 10 years of age).—Baginsky (*Med. Record*).

Ankylostoma Duodenale in Infants.—

℞	Extr. filicis maris	2 gm.
	Ol. ricini	10–15
	Syr. menth	30

To be taken in two doses.—(*Med. Record.*)

Palatable Quinine Mixture for Children.—(By W. J. Greanelle, M.D., *N. Y. Med. Jour.*, Oct. 28, '99). Having had occasion to prescribe quinine repeatedly for young children, and being dissatisfied with the combination with syrupus yerbæ santæ, I have made a number of experiments with a view to obtaining a pleasant and acceptable quinine preparation which could be continuously administered to children without their objection.

I give below the details for the preparation of a "child's quinine mixture" which I find not only to be readily taken by children, but also serviceable as a bribe to be given after unpleasant medicines, such as stronger solutions of quinine.

The mixture is designed as a tonic and malarial prophylactic for children living in malarious sections. It will serve for active medication in acute cases of malarial disease in children of three years or younger by giving the larger dose at hourly intervals.

I find that children literally cry for it, and that it has frequently served as an excellent bribe, to be given immediately after a simple solution of quinine hydrochloride in water when large doses of the drug are necessary. A teaspoonful of water carrying two or three grains of quinine muriate will be readily taken by any child, with "a spoonful of pink medicine right after." Those who have little patients in large numbers will appreciate this.

(1)	℞	Quinine hydrochlorate	gr. v–x
		Alcohol	ʒj
	M.		
(2)	℞	Oil of cinnamon	
		Oil of anise, āā	♏ xxx–xl
		Magnesia	q. s.
		Water	℥j
	M.	Let stand for some hours; filter.	
(3)	Mix 1 and 2 and add—		
		Simple syrup	℥iij
		Carmin or cochineal solution	gtt. v

Dose one or two drachms, as directed.

Saccharin in small quantity helps to disguise the larger dose of quinine.

Small doses of Fowler's solution may be added, if indicated, or sodium bromide for children made irritable by quinine.

Druggists will make this in quantity and keep it in stock if requested. It is simple, easily made, and inexpensive. Moreover, children like it.

Ichthyol in Whooping-cough.—Dr. J. FRANCIS SONTER (*Australasian Medical Gazette*, September 20th) records the satisfactory results obtained by him with pills of ichthyol, in whooping-cough. He put four of his own children, varying in age from 2 years and 6 months to 8 years, on one grain (increased in a few days to two, then to three and four grains) every four hours. Marked improvement ensued from the first, and Dr. Sonter tried the remedy with equally favorable results in ten other cases. He saw no unpleasant effects.—*New York Med. Jour.*, Oct. 28, 1899.

ABSTRACTS

SUMMER DIARRHEA: ITS PROBABLE CAUSE.

H. Poole Berry (*Lancet*, 1899, No.3973), says: It is quite evident that the disease is prevalent at those seasons when from the temperature conditions there is known to exist an increase in fermentative activity in lower vegetative micro-organisms; and it seems difficult to get away from the conviction, that it is caused by the products of these active processes among organic impurities, wherever the latter exist in quantity and surroundings, such as may be favorable and congenial for the cultivation of the particular micro-organism or micro-organisms concerned. That the particular germ or germs flourish mostly among dirty, closely crowded, and ill-ventilated habitations is simply what may be expected from our general knowledge of the behavior of other specific fevers. But the problem at issue is that this "summer diarrhea" affects a whole neighborhood, or, indeed, a whole country, rich and poor, clean and dirty, in towns and villages, old and young, persons following different habits and modes of living and eating and drinking. All such classes are certainly not equally affected nor are all localities equally attacked, but that the epidemic is indefinitely widespread is manifestly evident. The only one condition essential on the face of it is a certain definite elevation of temperature. That the elevated temperature then is capable of producing a rapid increase in the particular germs or of endowing them with sudden virulently infective powers seems an unavoidable conclusion.

The difficulty still remains as to where the culpable micro-organisms live and flourish. They most probably live in the surroundings of the dwellings in which the sufferers reside, and inasmuch as the disease prevails in all manners and conditions of houses, houses with every sanitary advantages and the reverse (although, truly, not to the same extent), it seems almost irresistible to conclude that they must live in the soil which is beneath us all. That all soils are not equally favorable would appear evident from the different severity of the disease in different localities. Methods of sanitation which prevent soil-contamination with organic refuse (unless such refuse be quickly brought under the healthful influence of natural vegetation) and sanitary regulations which prevent the heaping up and collection of dust and other filth, tend to hinder, there is little doubt, the prevalence of the disease. In the light of recent discoveries relating to malarial poisons it may be not improbable that winged insects may be instrumental in the conveyance of this particular disease. But that the root of the evil exists in the superficial subsoil when sufficiently heated appears to be yearly approaching to the position of definite certainty ever since the important and far-reaching observations of the late Dr. Edward Ballard upon the temperature of superficial subsoils at a "four-foot depth." In proof or otherwise of this view, it would be highly interesting to ascertain whether any affection similar to our "summer diarrhea" is recognized as occurring on board ships in tropical regions, where overcrowding is not unknown and absolute cleanliness cannot always be obtained.

THE PREVENTION OF FEEBLE-MINDEDNESS.

At least as much importance attaches to the means of preventing mental feebleness as to the treatment of defective children. When myopia and adenoids—which not uncommonly occur together—are neglected, children are apt to be mentally backward in their school life; neglect of treatment leads to imperfect appreciation through the senses, resulting in deficient mental training. Crippled children may have good brains, though their physical defects prevent the ordinary means of education, which need to be adopted under the circumstances. Choreic children who have had several such illnesses are often delicate, but are not usually exceptionally dull if the necessary advantages are afforded them. In times past it was often thought necessary to leave the epileptic children without education; modern experience has shown that full, healthy occupation, which may be made educative, increases brain stability and tends to save mental power; while, when the fits begin to pass off, systematic education under due supervision may prevent that degree of mental inaptitude and irritability which so often follows epilepsy. Even the imbecile infant, if well trained from the earliest days, may become well behaved, of good habits, and social appearance; whereas, when neglected, he is apt to grow up unsocial and a greater burden to others than needs be. In all cases of congenital defect early diagnosis and good management are necessary.—*Brit. Med. Jour.*, 1899, No. 2026, 1209.

OBSERVATIONS ON CLINICAL THERMOMETRY.

W. FLEMING PHILLIPS (*Brit. Med. Jour.*, 1899, No. 2026) says that in some children and adolescents, and even in adults with unusually vigorous circulation, the normal limit may perhaps be extended upward to 99.0°, but such cases are so rare in clinicai observationt hat it is safest,as a rule- to disregard them. Theoretically, if we are to have one so-called "nor, mal mark" on our thermometers, it would seem more scientific to place that mark upon the point that indicates the mean of the normal range, and that point is, in my experience, not 98.4°, but 97.4°. Practically, however, we may avoid mistake if, retaining the present marking, we bear in mind that 98.4° is the maximum limit of normal temperature, and that, as a rule, we should hesitate to decide that a patient is non-febrile unless his temperature is under this mark.

The method of applying the thermometer is deserving of more attention than it has generally received. It can hardly be questioned that to place it in the armpit is not only the most convenient method, but is also in most respects the best. But there is a right and a wrong way even of doing this. The instrument should be placed, as perhaps is most frequently done, between the arm and the side in a position parallel to the axis of the arm, the bulb being passed into the vault as far as it will go. If the arm be now kept pressed against the side, the instrument will be kept entirely covered, and in contact with the skin.

To the method of putting the thermometer in the mouth there are objections that do not seem to be generally understood. There is, first, the risk of conveying infection, for it must not be supposed that the thermometer is always disinfected, or even washed after use, and, secondly, there is the liability of the temperature appearing lower than it really is, owing to the exposure of the protruding stem and to the lips not being always closed, the consequent entrance of air into the oral cavity, and the evaporation of the moisture from the wetted portion of the instrument. It seems probable also that the temperature of the mouth is more liable to variation than that of the axilla from the ingestion of foods and drinks of widely different temperatures, from the use of condiments, from the local warming effect of mastication, and even from the varying temperature of the stomach at different periods after meals.

We owe it to our patients that no thermometer shall be inserted in the mouth unless it is first washed and disinfected. The author has found the rectal temperature higher by 0.4° to 1.0° F. than the axillary, and that the other objections are quite as weighty as those that pertain to the oral method.

ABSCESS OF LIVER IN A CHILD OF TWO YEARS.

Moncorvo, Rio de Janeiro, reports (*Revue Médicale*, Sept. 19, 1899) the case, affirming the disease to be one of great rarity, inasmuch as not a hundred cases can be found in the literature.

The patient's mother was delicate, the father tubercular and syphilitic. Three former children had died, probably from hereditary syphilis. This child had had only measles and slight malaria.

Two months previously, child fell and struck his hypochondrium on a curb-stone. He cried for a while, but afterwards returned to his play. Next day pain reappeared, fever set in and continued until admission to hospital. The incision was followed by recovery.

After eliminating the hypothosis of a hydatid cyst, of invasion of the ductus choledochus by lumbricoids, of umbilical phlebitis, appendicitis and typhoid, the author concludes the cause to have been traumatism.

POST-DIPHTHERITIC PARALYSIS WITH PECULIAR EDEMA.

H. **Kraus** (*Jahrbuch für Kinderheilk*, Bd. L., Heft iii).

The patient, a girl of nine years, had diphtheria of an ordinarily severe type, and was two weeks in bed. On recovery, she had severe polyneuritis. The paralysis affected the muscles of the upper extremity, back, belly and chest. Patient could only walk when supported. Sensation was fairly normal. Patellar reflex absent. Notable was a *fusiform swelling* of both arms, largest at the elbow, and lessening toward the armpit and wrist. The swelling was distinctly an edema, pitting on pressure, doughy and almost painless. The muscle seemed little affected, and the elbow-joint was neither distended nor painful. The legs were slightly edematous; the palms of the hands perspired freely. This edema disappeared, and was followed by a new attack a few days later in the eyelids and cheeks. There was little anemia, no urinary derangement whatever, and a normal heart (barring a slight systolic murmur). Digitalis had no effect on the swelling.

Excluding acute myalgia, polymyositis and trichinosis, the author after an interesting consideration of neuritic and neurotic edemata in general concludes the probable explanation to be that the *vaso-motor* nerves of the parts affected were the cause of the disorder.

Under rational treatment the edema subsided slowly, and barring a relapse after a premature attempt at walking disappeared altogether.

The writer was unable to find reports of any case as severe as this following diphtheria.

A CASE OF FATAL HEMOPTYSIS IN A CHILD OF EIGHT YEARS.

E. Ausset (*Gaz. des Hôpit.*, 1899, p. 40). In the autopsy of a child of eight, who had died of large and repeated hemorrhages, there was found only congestion in the apices of the lungs, without visible tubercular lesions. The bronchial glands were tubercular, and there was one small and localized tubercular focus in the body of the lung. Clinically, the differential diagnosis led to the belief that the bleeding could originate only from the lung, and only from tuberculosis. Acknowledgedly there was no cavity from which such hemorrhages ordinarily arise, nor could arrosion and ulceration of a vessel-wall by a gland be considered probable, for this usually causes one immense hemorrhage instead of, as in this case, four separate and successive ones; and an arrosion would have scarcely escaped the eye on close examination. The sole remaining potential cause was the apical congestion, which was probably of a tubercular character. A relatively small vessel had broken, several hemorrhages followed, each abundant, with fatal anemia as a final consequence.—*Der Kinderarzt*, Sept. 1899.

ANTITOXIN.

In a recent bulletin of the Chicago Health Department (*Chicago Clinic*, 1899, xii, 422) the following information is given. No more forcible argument in favor of the early administration of antitoxin than the results given below is necessary:

The results obtained, as set forth in the tables, are attributed by the department and its inspectors, primarily and most importantly, to prompt administration of antitoxin—in full strength and quantity—to every case visited that warrants the suspicion of diphtheria.

By "full strength and quantity" is meant at least the minimum dose of 2,000 units in 5 cc. The results of this strength and bulk have been found more satisfactory than those of more concentrated serums, and much more satisfactory than a lesser number of units. Experience has shown the importance of a large initial dose, ranging from 2,000 to 3,000 units—depending upon the gravity and symptoms of the disease.

The maxim of the inspectors has come to be: Inject early and enough.

Dr. N. S. Davis, Sr., has recently said, "If an antitoxin or a medicine is known that will promptly destroy the specific toxin of an infectious fever, of course it should be administered as early and efficiently as possible."

To no other agent in medicine does this injunction of the Nestor of medical science in America apply with greater force than the use of antitoxin in diphtheria.

In the presence of suspicious symptoms no time is lost—even to secure a bacterial diagnosis—before making the injection. The department and its inspectors are as fully convinced of the innocuousness of the serum under all circumstances as they are of its specific antidotal effect upon the toxin of the Klebs-Loeffler bacillus.

Of hardly less importance is held the early bacterial diagnosis of every case of "sore throat" visited. Frequently, where the clinical symptoms do not yet point to diphtheria, the microscope reveals the presence of the bacillus, and then an injection of antitoxin literally nips the disease in the bud. This practice of the department will account for the large proportion of cases recorded as treated on the first or second days of the disease, while the prompt administration of full doses of the serum accounts equally well for the low death rate among the cases thus early treated.

The record of 4,071 cases shows one death in 355 treated on the first day of the disease—a mortality rate of 0.28 per cent.; 17 deaths in 1,018 first treated on the second day—a mortality of 1.67 per cent.; 57 deaths in 1,509 treated on the third day—a mortality of 3.77 per cent.; 82 deaths in 720 treated on the fourth day—a mortality of 11.39 per cent.; and 119 deaths in 469 cases first treated later than the fourth day of the disease—a mortality rate of 25.37 per cent.

In 2,882 cases of diphtheria treated with full doses of antitoxin on the third day of the disease, or earlier, there were 75 deaths—a mortality rate of 2.6 per cent. In the remaining 1,189 cases first treated on the fourth day, or later, there were 201 deaths—a mortality of 16.9 per cent.

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